ORDER NO. MKE0012200C1

B15 (U.S.A), B4 (PUERTO RICO)

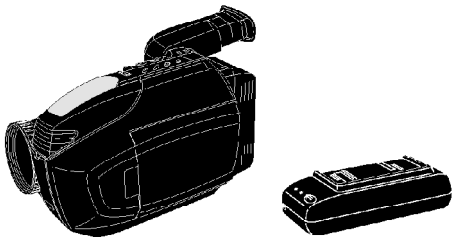
Service Manual

Compact VHS Camcorder

Palmcorder® VHSC

PalmSight™

PV-D301 / VM-D101 / PV-L501 / PV-L551 / PV-L561 / PV-L581 / PV-L51 / PV-L601 / PV-L651 / PV-L661 / PV-L681 / PV-L61 / VM-L451



MODELS: PV-D301/ VM-D101/ PV-L501 PV-L551/ PV-L581/ PV-L581/ PV-L51/ PV-L601/ PV-L651/ PV-L661/ PV-681/ PV-L61/ VM-L451

MODEL: PV-A19-A

SPECIFICATIONS

ITEM	SPECIFICATION	1	2	3	4	5	6	7	8	9
Power Source	Compact VHS Camcorder: DC 6 V AC Adaptor: 110/120/220/240 V AC, 50/60 Hz Battery: Nickel-Cadmium Type DC 6 V	○	○	○	○	○	○	○	○	○
Power Consumption	Compact VHS Camcorder: 6 V DC 6.0 W (Max. 9.0 W) 6 V DC 8.5 W (Max. 11.5 W) AC Adaptor: 19 W 1.2 W (when not in use.)	○ – ○	○ – ○	– ○ ○	– ○ ○	– ○ ○	– ○ ○	– ○ ○	– ○ ○	– ○ ○
Video Signal	EIA Standard (525 lines, 60 fields) NTSC color signal	○	○	○	○	○	○	○	○	○
Video Recording System	Head: 2 rotary heads plus flying erase head. Helical scanning system 4 rotary heads plus flying erase head. Helical scanning system Signal-to-Noise Ratio: SP: more than 43 dB SLP: more than 41 dB Horizontal Resolution (Color/Monochrome) Recording: more than 300 lines Playback: more than 230 lines	○ – ○ ○	○ – ○ ○	○ – ○ ○	○ – ○ ○	– ○ ○ ○	○ – ○ ○	○ – ○ ○	○ – ○ ○	– ○ ○ ○
Audio	Head: Normal Mono: 1 stationary head MIC Input Level (M3 type) - 70 dB Frequency Response: Normal Mono: SP: 100 Hz - 8 kHz SLP: 100 Hz - 5 kHz Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB LP: more than 40 dB	○	○	○	○	○	○	○	○	○
Tape Speed	SP: 1-3/16 i.p.s (33.35 mm/s), SLP: 7/16 i.p.s (11.12 mm/s) Record/Playback Time: SP: Max. 30 min, SLP: Max. 90 min, with TC-30 Tape FF Time: Less than 7 min. (TC-30 Tape) REW Time: Less than 4 min. (TC-30 Tape)	○	○	○	○	○	○	○	○	○
Tape Format	Tape width 12.7 mm (0.5 inch) high density tape	○	○	○	○	○	○	○	○	○

ITEM	SPECIFICATION	1	2	3	4	5	6	7	8	9
Pick-Up System	Sequential color difference field reverse system	○	○	○	○	○	○	○	○	○
Pick-Up Device	One integral color filter Charge Coupled Device (CCD)	○	○	○	○	○	○	○	○	○
Lens	20 : 1 zoom lens, F1: 1.6 with auto iris control Focal length: 3.6 mm - 72.0 mm 4 speed power zoom function Lens filter diameter: 49 mm	○	○	○	○	○	○	○	○	○
Viewfinder	11 mm (0.45 inch)/14 mm (0.55 inch) Liquid Crystal Color Electronic Viewfinder 10.2 mm (0.4 inch) Electronic Viewfinder	○ –	– ○	– ○	○ –	○ –	○ –	○ –	○ –	○ –
LCD Monitor	63.5 mm (2.5 inch) Liquid Crystal Display 76.2 mm (3.0 inch) Liquid Crystal Display 101.6 mm (4.0 inch) Liquid Crystal Display	– – –	– – –	○ – –	○ – –	○ – –	– ○ –	– – ○	– – ○	– – ○
Minimum Illumination Required	0.8 lx (F1: 1.6) 0.08 footcandles 7 lx (F1: 1.6) 0.7 footcandles (EIA Standard)	○	○	○	○	○	○	○	○	○
Operating Condition	0 °C ~ 40 °C (32 °F ~ 104 °F) (Temperature) 10 % ~ 75 % (Humidity)	○	○	○	○	○	○	○	○	○
Weight	0.85 kg (1.87 lbs.) 0.98 kg (2.16 lbs.) 0.99 kg (2.18 lbs.)	○ – –	○ – –	– ○ –	– ○ –	– ○ –	– ○ –	– ○ ○	– ○ –	– ○ –
Dimension (W x H x D)	110.4 mm x 122.0 mm x 186.5 mm (4-3/8 inch x 4-3/4 inch x 7-3/8 inch) 120.0 mm x 122.0 mm x 186.5 mm (4-3/4 inch x 4-3/4 inch x 7-3/8 inch)	○ –	○ –	– ○	– ○	– ○	– ○	– ○	– ○	– ○

1. PV-D301
2. VM-D101
3. PV-L501
4. PV-L551/PV-L561/PV-L51
5. PV-L581
6. PV-L601/VM-L451
7. PV-L651
8. PV-L661/PV-L61
9. PV-L681

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

Panasonic® /Quasar®

1. MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL

Use models shown in the chart below to distinguish the different models included in this Service Manual.

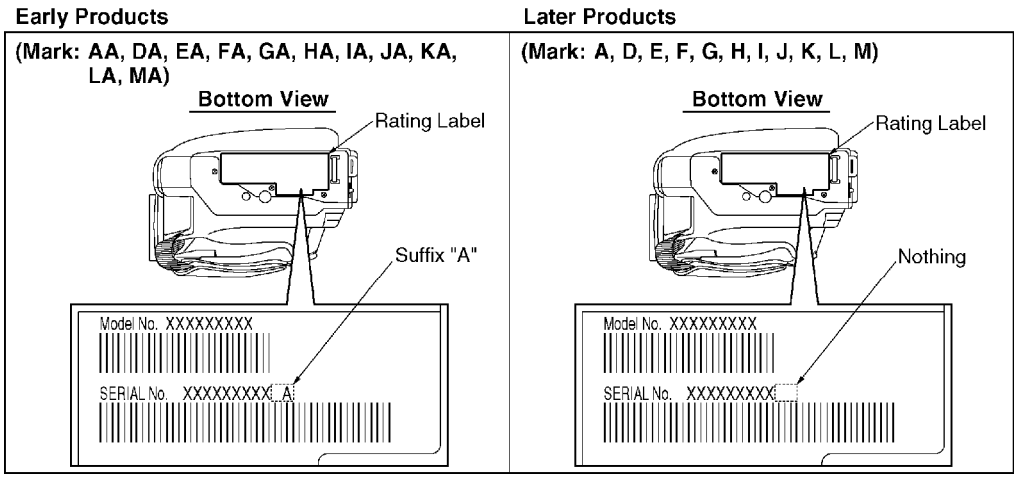
MODEL	MARK	MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L581	F	PV-L661	J
PV-D301	AA	PV-L581	FA	PV-L661	JA
VM-D101	B	PV-L51	G	PV-L681	K
PV-L501	C	PV-L51	GA	PV-L681	KA
PV-L551	D	PV-L601	H	PV-L61	L
PV-L551	DA	PV-L601	HA	PV-L61	LA
PV-L561	E	PV-L651	I	VM-L451	M
PV-L561	EA	PV-L651	IA	VM-L451	MA
				NOT USED	Z

Notes for PV-D301, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, PV-L651, PV-L661, PV-L681, PV-L61, VM-L451

These models (Color EVF models) have two marks (Model No. Identification Mark) such as A and AA for PV-D301, D and DA for PV-L551, etc., in this service manual.
When servicing these models, please note the proper mark and proceed with servicing as shown below.

How to distinguish marks A from AA, D from DA, etc.:

To distinguish, "A" is printed on the Serial No. on the Rating Label located on the bottom side of the camcorder for early products, and is shown with Model No. Identification Mark: AA, DA, EA, FA, GA, HA, JA, KA, LA, MA in this service manual.
The Color EVF unit of these models has been changed on running change basis. The Color EVF unit is interchangeable for early products and later products. However, individual parts of the Color EVF unit are not interchangeable.
Please make sure whether "A" is printed or not on the Serial No. on the Rating Label located on the bottom side of the camcorder when servicing these models.



Note:

For part standardization of the Color EVF unit replacement parts, only the Color EVF unit for later products will be supplied.
However, when replacing the individual parts of the Color EVF unit, use the proper parts, referring to "REPLACEMENT PARTS LISTS" section.

2. SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

2. **An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.**
3. **When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
4. **After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.**
5. **After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

LEAKAGE CURRENT COLD CHECK

1. **Unplug the AC cord and connect a jumper between the two prongs on the plug.**
2. **Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 M Ω and 5.2 M Ω . When the exposed metal does not have a return path to the chassis, the reading must be infinity.**

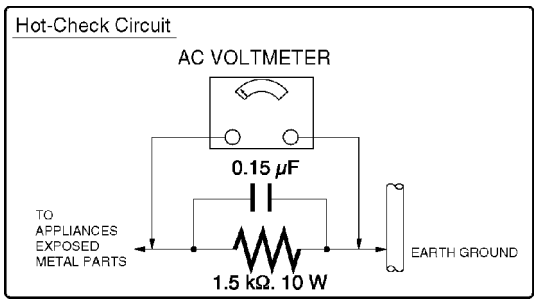
LEAKAGE CURRENT HOT CHECK
(See Figure 1.)

1. **Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.**
2. **Connect a 1.5 k Ω , 10 W resistor, in parallel with a 0.15 μ F**

capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure 1.

3. **Use an AC voltmeter, with 1 M Ω /V or more sensitivity, to measure the potential across the resistor.**
4. **Check each exposed metallic part, and measure the voltage at each point.**
5. **Reverse the AC plug in the AC outlet and repeat each of the above measurements.**
6. **The potential at any point should not exceed 0.75 V RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 mA. In case a measurement is outside of the /limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.**

Figure. 1



3. PREVENTION OF ELECTRO STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. **Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**

2. **After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
4. **Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.**
5. **Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
6. **Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).**
7. **Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.**
   CAUTION :
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. **Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).**

4. X-RADIATION

(For model with Monochrome EVF)

WARNING :

1. **The potential source of X-Radiation in EVF sets is the High Voltage section and the picture tube.**
2. **When using a picture tube test jig for service, ensure that jig is**

capable of handling 10 kV without causing X-Radiation.

NOTE :

It is important to use an accurate periodically calibrated high voltage meter.

3. **Measure the High Voltage. The meter (electrostatic type) reading should indicate 2.2 kV±0.1 kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.**

5. OPERATION GUIDE

6. SERVICE NOTES (PLEASE READ)

6.1. SERVICE NOTES

6.1.1. EXTENSION CABLES FOR SERVICE

Using the following Extension Cables, place the unit as shown for check and service.

No.	PART NUMBER	PART NAME	CONNECTION
①	VUVS0007	12Pin Extension Cable	FP8 on Main C.B.A. ~ CCD F.P.C. on Lens Unit
②	LSUA0020	20Pin Extension Cable	FP9 on Main C.B.A. ~ Lens F.P.C. on Lens Unit
③	VUVS0015	28Pin Extension Cable	FP1 on Main C.B.A. ~ A/C Head/Capstan F.P.C. on VCR Mechanism Chassis Ass'y
④	VUVS0012	22Pin Extension Cable	FP3 on Main C.B.A. ~ Top Operation F.P.C.

NOTE:

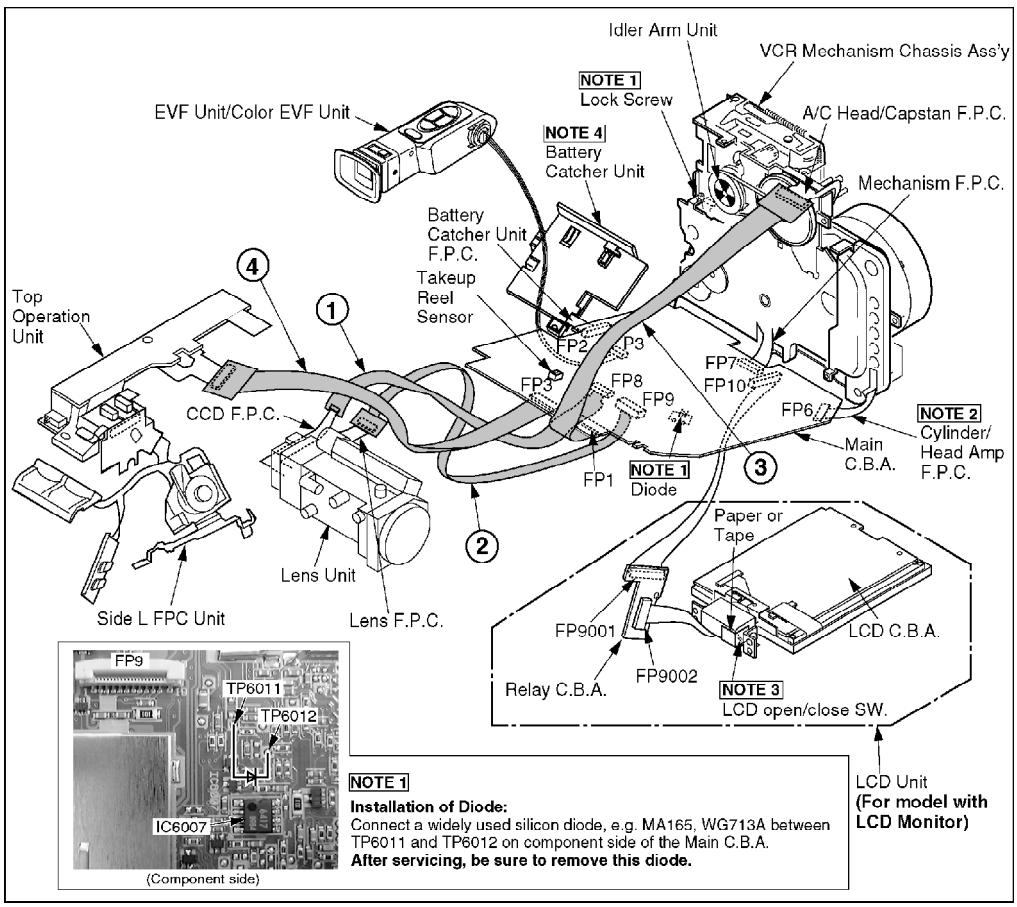
1. **When using the cassette tape:**
   - **A. Be sure to remove a cassette lid cover of cassette tape.**
   - **B. Be sure to install the Lock Screw to Cassette Up Unit. After servicing, be sure to remove the Lock Screw.**
     Refer to "HOW TO HOLD THE CASSETTE UP UNIT IN THE DOWN POSITION WITHOUT CASSETTE COVER INSTALLED ."
   - **C. Select the H. SAFETY DEFEAT in SERVICE MODE. Refer to " SERVICE MODE SPECIFICATION (SELF-DIAGNOSTIC SYSTEM) . "**

     Or, connect a silicon diode on component side of the Main C.B.A. as shown to defeat safety function.
     (Since Takeup Reel sensor, located on Main C.B.A. does not work when opening Main C.B.A., the mechanism does not work (Reel lock). Therefore, make sure to defeat Safety function.)
2. **Use extreme care so as not to apply any excessive pressure to the**

Cylinder/Head Amp F.P.C. After servicing, be sure to place it correctly. Refer to "Cylinder Unit" in "MECHANISM SECTION."

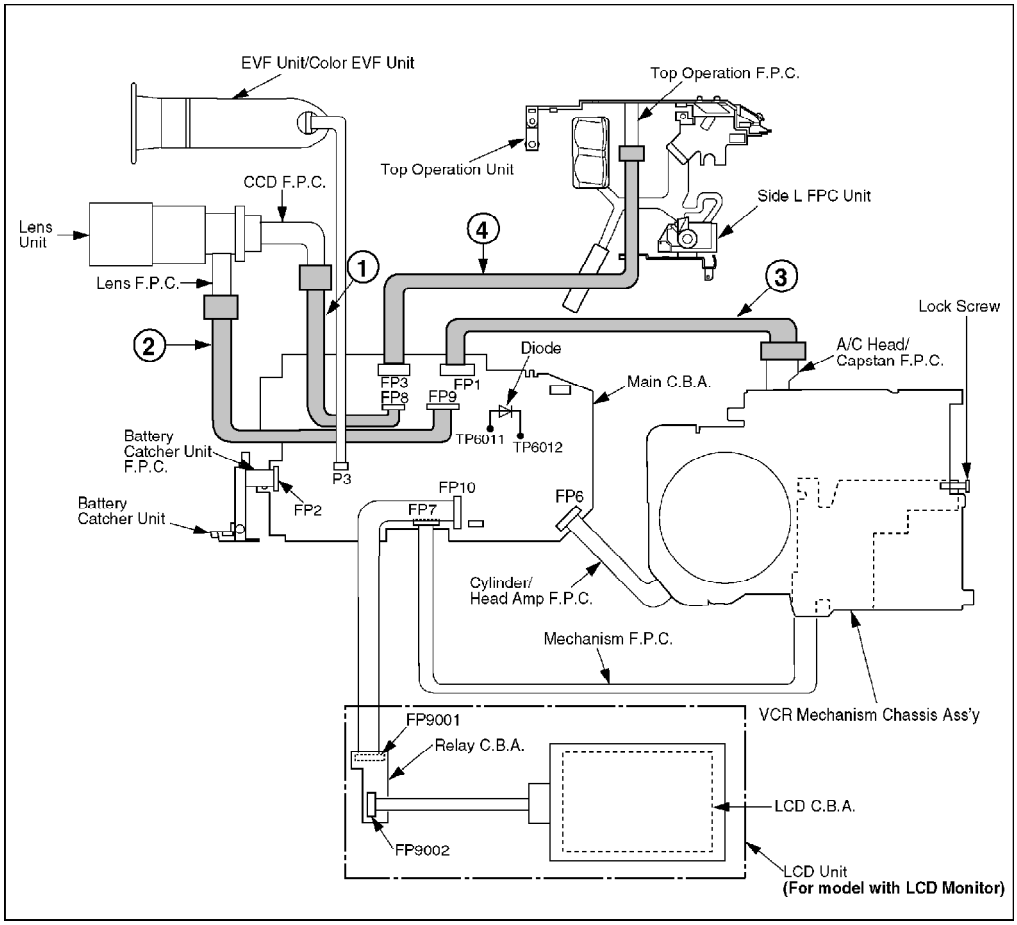
3. **The LCD open/close SW. is for changing between LCD Display or EVF Display. When turning on LCD Display, place some paper or tape, etc. on LCD open/close SW. so that this SW. stays ON.**
4. **When servicing, avoid causing a from touching the component side of the Battery Catcher Unit to the Main C.B.A.**
5. **Use a grounded ESD wrist strap while disassembling the Lens portion.**
6. **Use extreme care when unplugging or plugging in connectors.**

Fig. 1-1



6.1.2. INTERCONNECTION OF EXTENSION CABLES

Fig. 1-2



6.1.3. HOW TO HOLD THE CASSETTE UP UNIT IN THE DOWN POSITION WITHOUT CASSETTE COVER INSTALLED

The Cassette Up Unit will be in the up position without the Cassette Cover installed.
To hold the Cassette Up Unit in the down position without it, a Lock Screw is needed.

Lock Screw (VHDW0125)

A Lock Screw is supplied as a service fixture.

6.1.3.1. How to install the Lock Screw:

1. If the Lock Lever, shown in gray, is set to Position "A" (No hole), change Position "A" (No hole) to Position "B" (Hole) as shown in Fig. 2-2 by pushing Portion (a) as shown in Fig. 2-1.
Note:
If the mechanism is in EJECT position, the Lock Lever cannot be changed to Position "B" by pushing Portion (a). In this case, apply the power to set the mechanism to STOP position.

Fig. 2-1

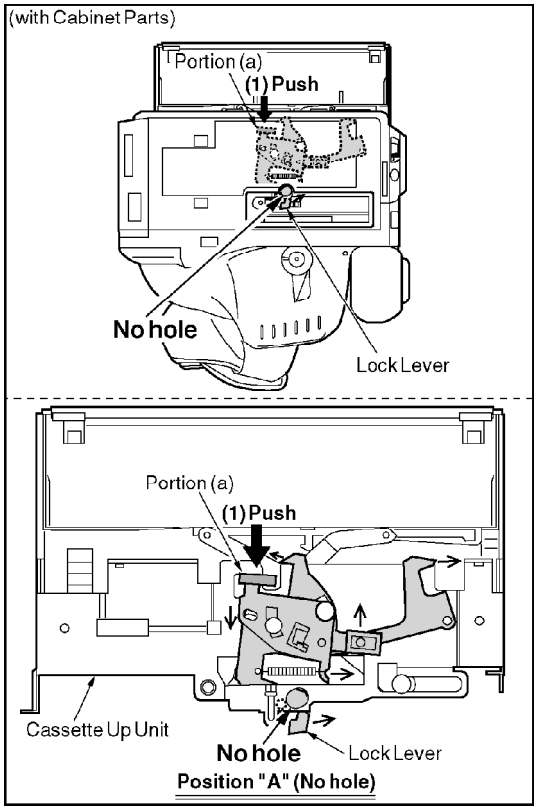
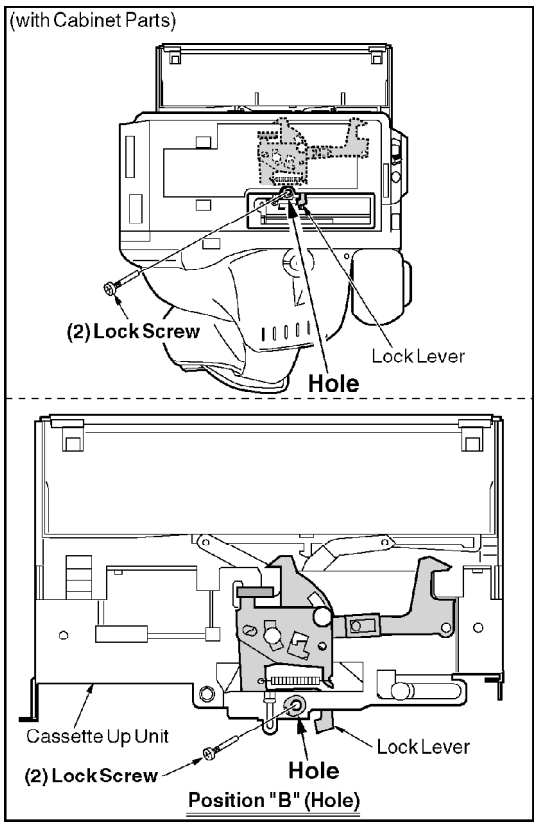


Fig. 2-2



2. Install the Lock Screw in the Hole (Threaded Hole for Lock Screw

access) in Position "B".

3. Hold down the Cassette Up Unit.
4. Confirm that Cassette Up Unit will be held in the down Position.

6.1.3.2. Lock Screw is required when:

1. performing "Tape Interchangeability Adjustment."
2. servicing with cassette tape in Service Position. The procedure below is required when the unit is in safety defeat mode.
   A. Confirm that the Lock Lever, shown in gray, is set to Position "A" as shown in Fig. 2-1, and that the mechanism is in the STOP position.
   B. Insert the cassette tape.
   C. Push Portion (a) as shown in Fig. 2-1 while keeping the Cassette Up Unit in the down position so the mechanism starts loading. (Cassette Down Switch is ON.)

CAUTION:
1. After servicing, be sure to remove the Lock Screw.
2. The replacement Cassette Up Unit and VCR Mechanism Chassis Ass'y are supplied with a Lock Screw installed. Make sure to remove this Lock Screw when replacing them.

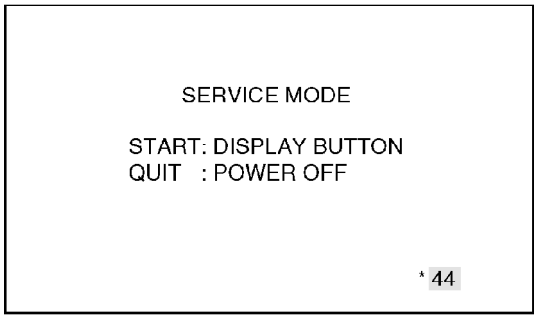
6.1.4. SERVICE MODE SPECIFICATION (SELF-DIAGNOSTIC SYSTEM)

Operation:

1. Start-up: Press and hold all of the Display, REC, and Stop buttons over 2 seconds, the unit goes into the self- diagnostic mode and main menu appears.
2. Mode Selection: Press display button to change and select self-diagnose mode.
3. Close: Turn off the Power Switch.

Display : Following descriptions can be displayed on EVF and TV monitor at the same time.

1. Main Menu



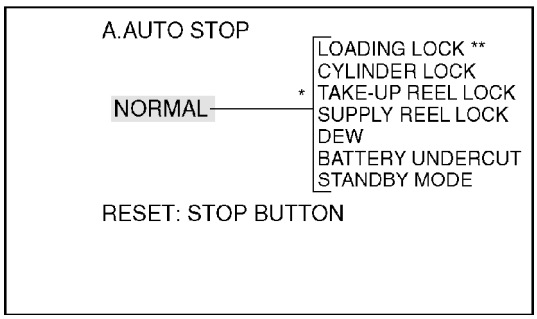
Press and hold all of the Display, REC and Stop buttons over 2 seconds. The Main Menu appears on E.V.F. and TV monitor.

* This figure stands for the Model No. of camcorder as shown.

MODEL NO.	PV-D301	VM-D1C1	PV-L501	PV-L551	PV-L561	PV-L581	PV-L51	PV-L601	PV-L651	PV-L661	PV-L681	PV-L61	VM-L451
* Figure	48	47	42	41	51	49	53	44	43	52	50	54	45

DISPLAY BUTTON

2. Auto Stop

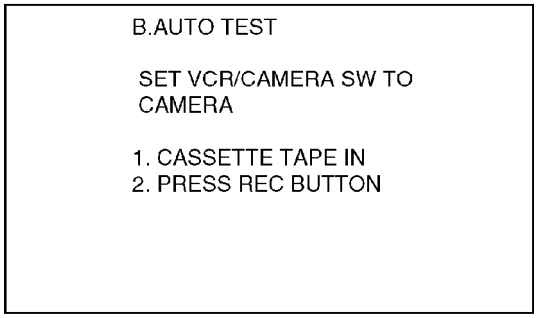


When the unit suddenly shuts off, It is possible to see the cause description in this menu. Even if the AC adaptor or battery is disconnected, the most recent failure will be memorized. Pressing the Stop button at this time will reset the memory.

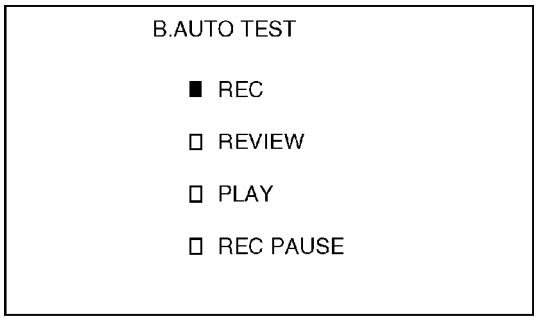
* Cause descriptions can be displayed until power shuts off.
** LOADING LOCK --- EJECT
STOP
STBY
REC / PB
(When it is possible to detect the lock position, loading lock position can be displayed.)

DISPLAY BUTTON

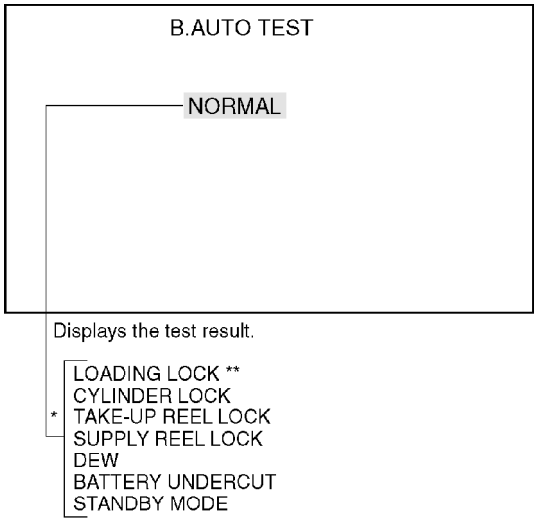
3. Auto Test



a. Cassette tape in and press REC button.
b. The unit operates automatically on tests.



a. Automatically operates REC (30sec), REVIEW, PLAY, and STOP.
b. Displays the test status while auto test is progressing. (■ Mark shows the test status.)



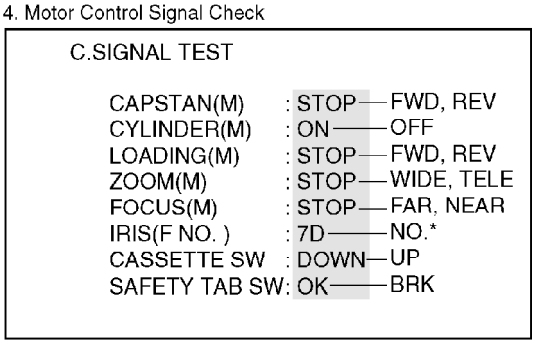
Displays the test result.

* LOADING LOCK **
CYLINDER LOCK
TAKE-UP REEL LOCK
SUPPLY REEL LOCK
DEW
BATTERY UNDERCUT
STANDBY MODE

* Cause descriptions can be displayed until power shuts off.
** LOADING LOCK --- EJECT
STOP
STBY
REC / PB
(When it is possible to detect the lock position, loading lock position can be displayed.)

DISPLAY BUTTON

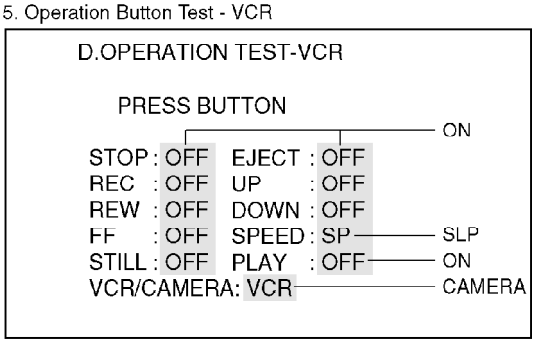
4. Motor Control Signal Check


C.SIGNAL TEST
CAPSTAN(M) : STOP — FWD, REV
CYLINDER(M) : ON — OFF
LOADING(M) : STOP — FWD, REV
ZOOM(M) : STOP — WIDE, TELE
FOCUS(M) : STOP — FAR, NEAR
IRIS(F NO.) : 7D — NO.*
CASSETTE SW : DOWN — UP
SAFETY TAB SW: OK — BRK

Displays all of motor drive signals and switch inputs from mechanism chassis.
* Iris No. display

DISPLAY BUTTON

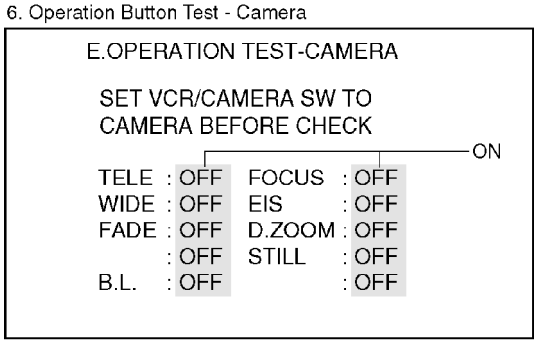
5. Operation Button Test - VCR



Tests connection of VCR operation buttons by pressing each button.

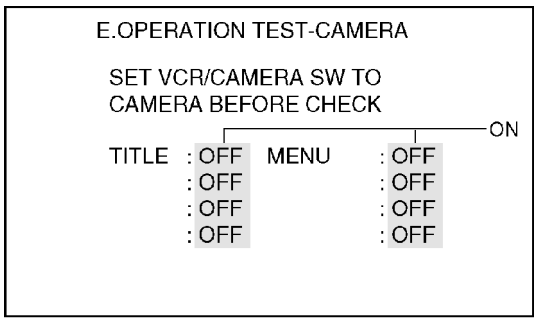
DISPLAY BUTTON

6. Operation Button Test - Camera



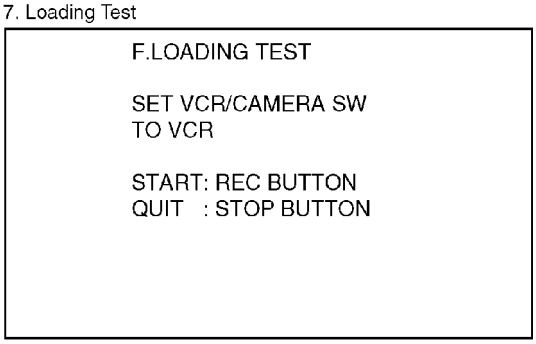
Tests connection of camera operation buttons by pressing each button.

DISPLAY BUTTON



DISPLAY BUTTON

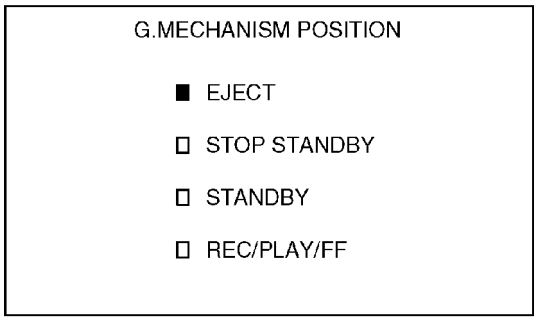
7. Loading Test



Repeats loading / unloading 10 times without tape to check loading mechanism.

DISPLAY BUTTON

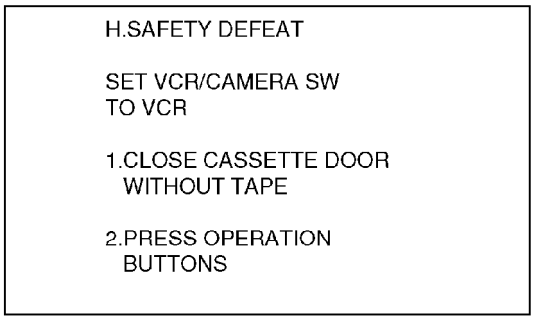
8. Mechanism Position



Displays mechanism position by monitoring mode switch.
(■ mark shows the current mechanism position.)

DISPLAY BUTTON

9. Safety Defeat

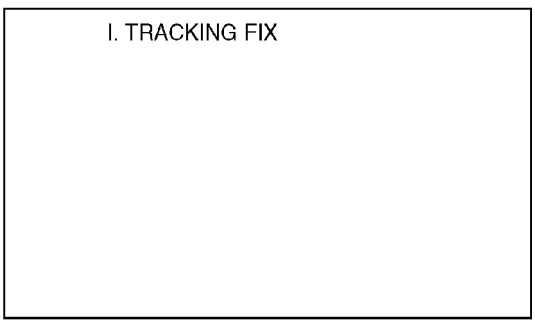


a. Defeats following safety functions. Cylinder lock, Reel lock, End of tape, Battery under cut, Safety tab switch.
b. It is possible to check mechanism movement without tape by pressing operation buttons in this mode.

Another Method to put the unit into Safety Defeat mode:
Connect a silicon diode between TP6011 and TP6012 on component side of the Main C.B.A.
Refer to "EXTENSION CABLES FOR SERVICE" in "SERVICE NOTES."

DISPLAY BUTTON

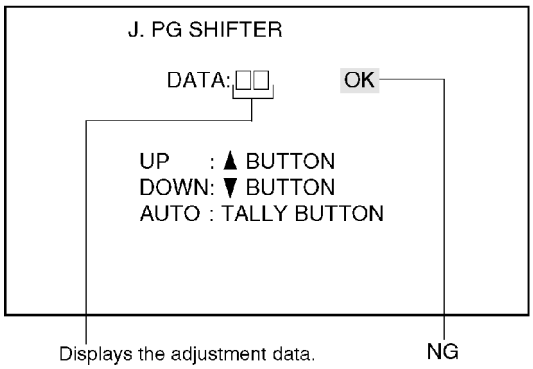
10. Tracking Fix



Functions to fix tracking position to its center for tape path alignment.

DISPLAY BUTTON

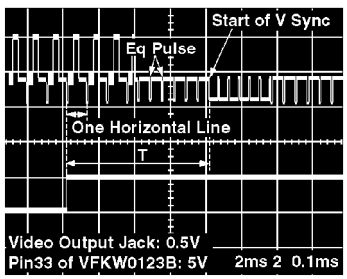
11. PG Shifter



This is a function to adjust Head Switching Position (PG SHIFTER) without using the Personal Computer.
Perform adjustment procedure (AUTO) or (MANUAL).
To adjust with this function, the TP Board, Audio/Video cable, oscilloscope, and VHS-C Alignment Tape (VFMS0004H6C) are necessary.
For connecting TP Board, refer to "HOW TO USE TP BOARD" in SERVICE NOTES.

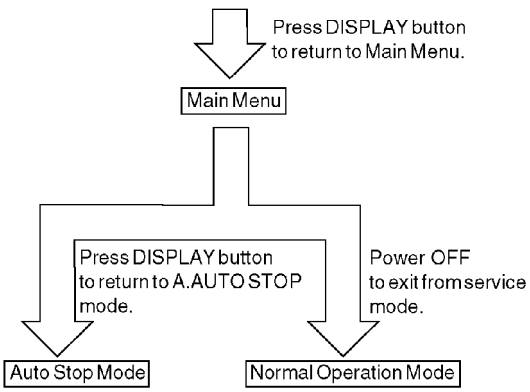
Adjustment procedure (AUTO)

1. Insert the VHS-C Alignment Tape to the camcorder.
2. Press PLAY button.
3. Press TALLY (REC) button while playing back.
   Head Switching Position (PG SHIFTER) will be adjusted automatically.
4. "OK" indicator will be displayed on EVF.
   Note:
   If "NG" indicator is displayed, adjust again.
5. Confirm that T is 6.5 H±0.5 H (approx.0.4 ms) as shown.



Adjustment procedure (MANUAL)

1. Perform steps 1 ~ 2 in Adjustment procedure (AUTO).
2. Press UP▲ or Down▼ button while playing back so that T is 6.5 H±0.5 H (approx. 0.4 ms).


Press DISPLAY button to return to Main Menu.
Main Menu
Press DISPLAY button to return to A.AUTO STOP mode.
Power OFF to exit from service mode.
Auto Stop Mode
Normal Operation Mode

6.1.5. DESCRIPTION OF EMERGENCY INDICATIONS

When something unusual as shown below occurs, LED begins flashing for approx. 15 seconds to indicate an Emergency before the camcorder shuts off.

No.	Information	POWER LED	Cause and Characteristic
①	Takeup-Reel Lock	◐	There is no TAKEUP REEL sensor pulse for 2.3 seconds (PLAY, REC) or 0.7 second (CUE, REVIEW, FF, REW).
②	Battery Under Cut or DEW	◓	When the Battery voltage drops to 5.3 V. Or excessive moisture condenses in the Unit.

NOTE :

◐ : Indicates LED Flashing at 3 Hz rate (duty 50%)

◓ : Indicates LED Flashing at 0.8 Hz rate (duty 50%)

6.1.6. METHOD FOR LOADING/UNLOADING OF MECHANISM

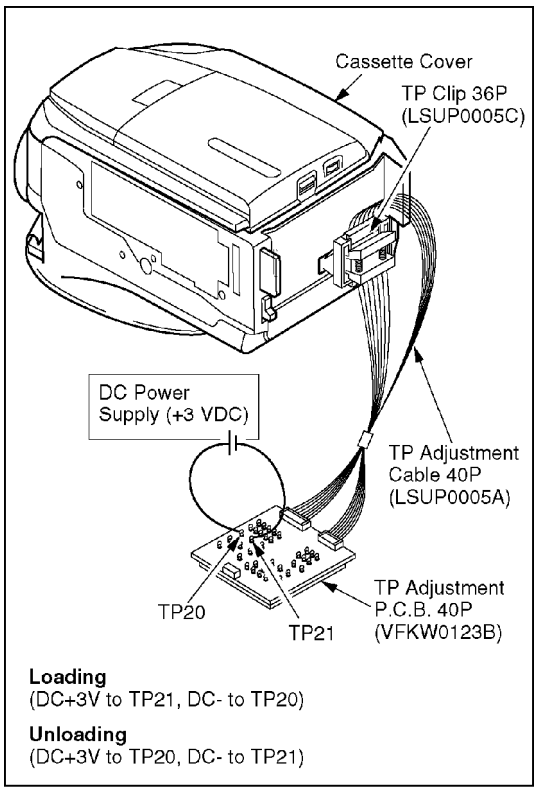
6.1.6.1. (Electrical Method)

CAUTION:

If loading does not start after DC Power Supply is applied, DO NOT continue to applying DC Power Supply.

Connect the TP Board as shown, and apply 3 VDC Power Supply (DC+ to TP21, DC- to TP20 for loading or DC+ to TP20, DC- to TP21 for unloading). Refer to "HOW TO USE TP BOARD."
It normally takes approx. 6 seconds to unload the Mechanism from fully-loaded position to EJECT position.

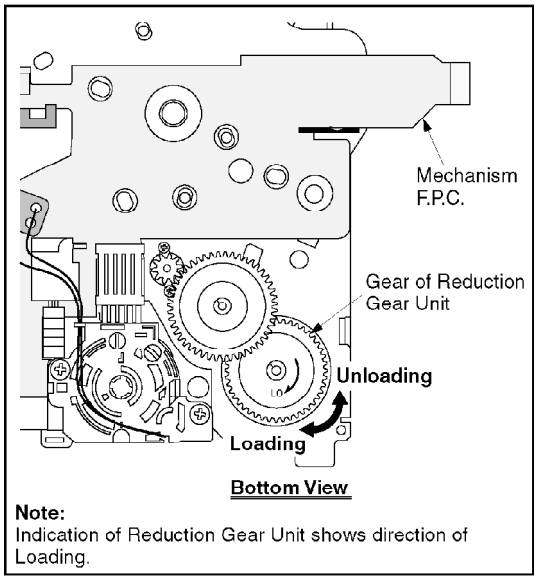
Fig. 3-1



6.1.6.2. (Manual Method) without Cabinet Parts

Turn the Gear of Reduction Gear Unit clockwise (for loading) or counterclockwise (for unloading) manually.
It is necessary to rotate approx. 80 times from fully-loaded position to EJECT position.

Fig. 3-2



Note:
Indication of Reduction Gear Unit shows direction of Loading.

6.1.7. HOW TO REMOVE A JAMMED TAPE

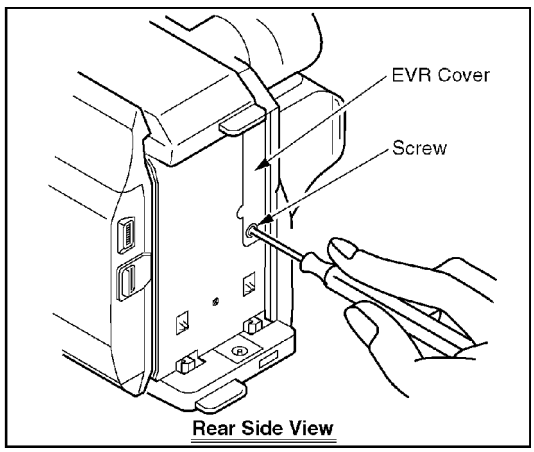
CAUTION:

If loading does not start after DC Power Supply is applied, DO NOT continue applying DC Power Supply.

Remove a jammed tape as follows:

1. Remove a Screw and remove the EVR Cover.

Fig. 4-1

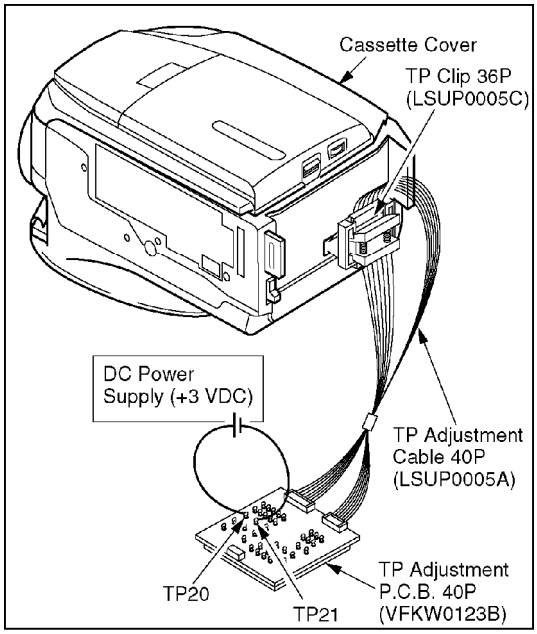


2. Place the unit with the Cassette Cover facing upward.

3. Connect the TP Board through the TP Board slot.

4. Apply +3VDC Power Supply to TP20 (+) and TP21 (-) on the TP Board to unload the mechanism. It normally takes approx. 6 seconds to unload the Mechanism to EJECT position. Then, remove the Power Supply and remove the TP Board.

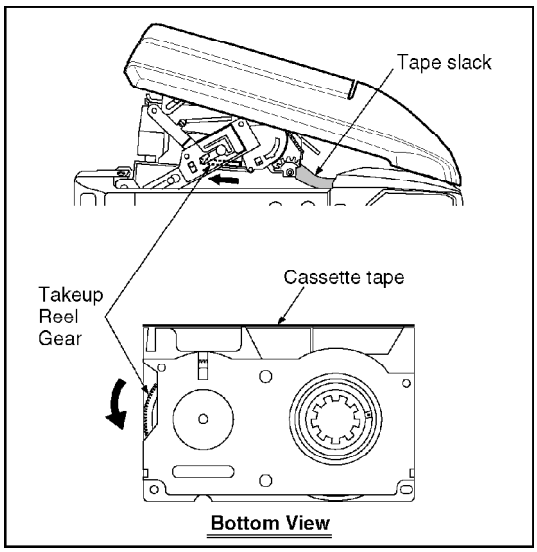
Fig. 4-2



5. Open the Cassette Cover fully.

6. Remove the tape slack by rotating the Takeup Reel Gear of the cassette tape as shown in Fig. 4-3.

Fig. 4-3



7. Take out the cassette tape.

8. Connect the Power or Battery to set the Mechanism to STOP Position.

6.1.8. HOW TO USE TP BOARD

6.1.8.1. TP Board is required when:

1. performing "Tape Interchangeability Adjustment."

2. performing "PC-EVR Adjustment."

3. the cassette tape is jammed. Refer to "HOW TO REMOVE A JAMMED TAPE."

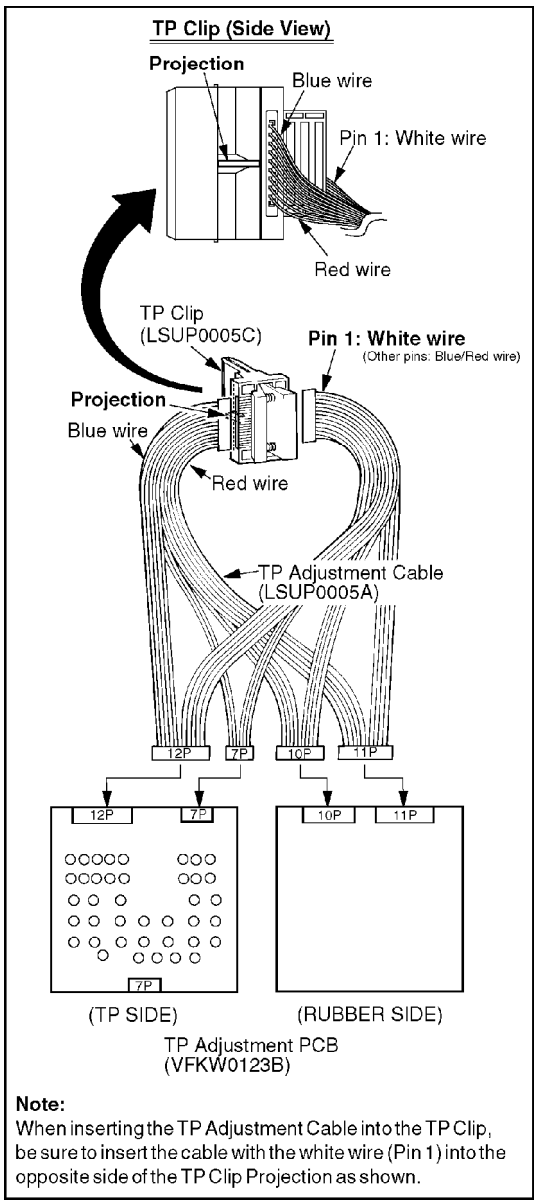
4. loading or unloading the Mechanism (Electrical Method).

5. performing a signal check

6.1.8.2. How to assemble TP Board:

1. Assemble the TP Board as shown.

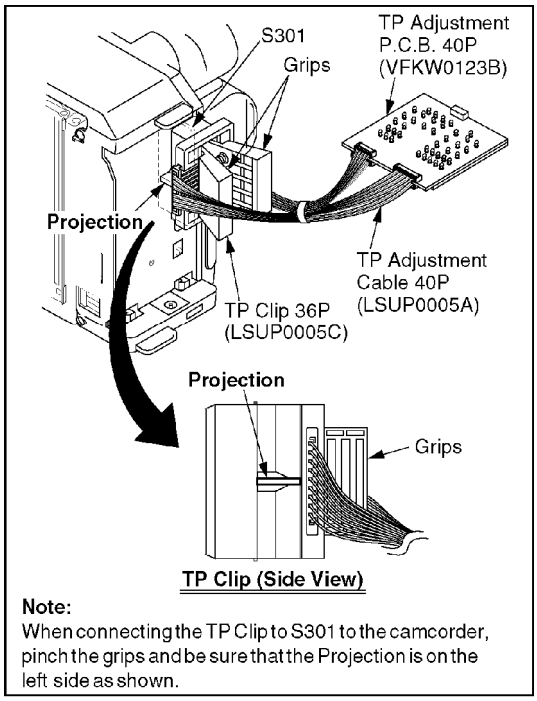
Fig. 5-1



6.1.8.3. How to connect TP Board to Camcorder:

1. Connect the TP Board to Camcorder as shown.

Fig. 5-2



6.1.8.4. Signal description on TP Adjustment P.C.B. 40P (VFKW0123B)

Fig. 5-3-1

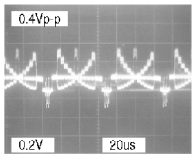
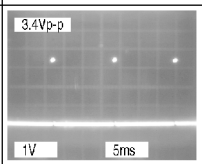
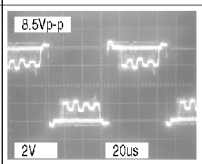
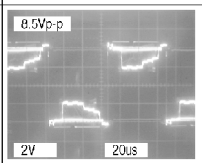
Pin No.	Signal Name	Description	Waveforms
1	GND	Grounding terminal	----------
2	IRIS	To monitor IRIS at Pin 33 of IC605 on Main C.B.A.	 Camera Mode (Gray Scale Chart)
3	GND	Grounding terminal	----------
4	Not used	----------	----------
5	Not used	----------	----------
6	EVR MODE (L)	EVR mode select: low	----------
7	CAM +4.5V	Power terminal	----------
8	EVR SERIAL DATA 1	Serial data output from PC to camcorder	----------
9	V-SYNC	To monitor V sync signal at Pin 18 of IC602 on Main C.B.A.	 Camera Mode
10	EVR SERIAL DATA 0	Serial data output from camcorder to PC	----------
11	CAMERA RESET (L)	Camera microcontroller reset: low	----------
12	Not used	----------	----------
13	EVR SERIAL CLOCK	Serial clock between PC and camcorder	----------
14	Not used	----------	----------
15	Not used	----------	----------
16	EVF-B	To monitor Color EVF blue signal at Pin 11 of IC901 on Color EVF C.B.A.	 Rec/PB Mode (Color Bar Chart)
17	EVF-G	To monitor Color EVF green signal at Pin 14 of IC901 on Color EVF C.B.A.	 Rec/PB Mode (Color Bar Chart)

Fig. 5-3-2

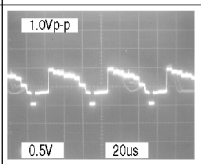
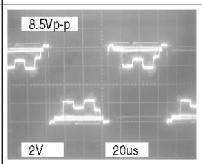
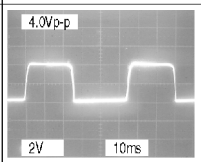
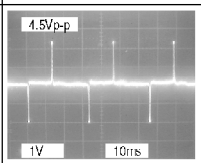
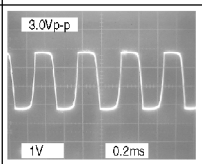
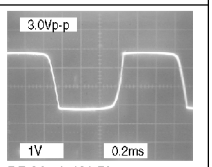
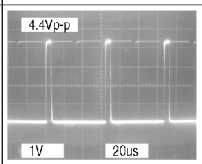
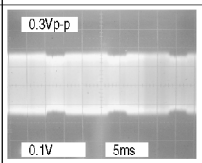
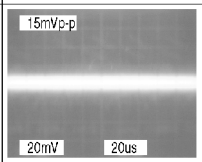
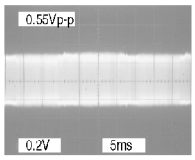
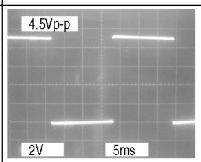
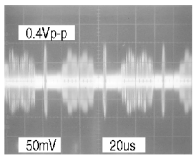
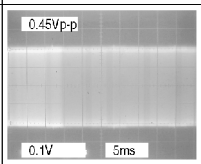
Pin No.	Signal Name	Description	Waveforms
18	LUMINANCE	To monitor luminance signal at Pin 78 of IC301 on Main C.B.A.	 Camera Mode (Color Bar Chart)
19	EVF-R	To monitor Color EVF red signal at Pin 16 of IC901 on Color EVF C.B.A.	 Rec/PB Mode (Color Bar Chart)
20	LOADING MOTOR 0	To monitor supply voltage to loading motor (+4.5V or GND)	----------
21	LOADING MOTOR 1	To monitor supply voltage to loading motor (+4.5V or GND)	----------
22	SUPPLY REEL PULSE	To monitor supply reel pulse at Pin 80 of IC6001 on Main C.B.A.	
23	Not used	----------	----------
24	Not used	----------	----------
25	PB CTL PULSE	To monitor PB control pulse at Pin 76 of IC6001 on Main C.B.A.	 PB Mode
26	SUPPLY PHOTO TR (L)	To monitor Supply Photo TR signal (TR on: low)	----------
27	CAP FG	To monitor capstan FG signal at Pin 67 of IC6001 on Main C.B.A. (SP: 2155Hz, SLP: 719Hz)	 PB Mode(SP)  PB Mode(SLP)
28	Not used	----------	----------
29	H-SYNC	To monitor H sync signal at Pin 61 of IC3001 on Main C.B.A. (In EVR adjustment mode, 629kHz carrier appears.)	 Rec/PB Mode

Fig. 5-3-3

Pin No.	Signal Name	Description	Waveforms
30	PB LUMINANCE	To monitor PB luminance signal at Pin 23 of IC3001 on Main C.B.A.	 PB Mode
31	YNR	To monitor YNR error signal at Pin 21 of IC3001 on Main C.B.A.	 PB Mode
32	ENVELOPE	To monitor PB envelope signal at Pin1 of FP6 on Main C.B.A.	 PB Mode
33	HEAD SW	To monitor head switching signal at Pin 23 of IC6001 on Main C.B.A.	 PB Mode
34	Not used	----------	----------
35	GND	Grounding terminal	----------
36	GND	Grounding terminal	----------
37	REC CHROMINANCE	To monitor recording chrominance signal at Pin 38 of IC3001 on Main C.B.A.	 Rec Mode
38	REC LUMINANCE	To monitor recording luminance signal at Pin 27 of IC3001 on Main C.B.A.	 Rec Mode
39	Not used	----------	----------
40	Not used	----------	----------

6.1.9. EEPROM DATA

CAUTION:

Be sure to save the EEPROM data using PC-EVR Adjustment Program before service and adjustment in order to make sure to avoid an accidental data loss, etc. as follows.

EEPROM IC

C.B.A.	EEPROM IC Ref. No.
Main C.B.A.	IC306

How to save the EEPROM data to your PC

1. Start up the PC-EVR Adjustment Program.

2. Select "1. Read (Save)/Write All EEPROM datas." in Main menu,

and then press "Enter" key.

3. Select "1. Save all data of EEPROM" in Read (Save)/Write All EEPROM datas menu, and then press "Enter" key.
4. Input the File name, and then press "Enter" key. The data of EEPROM IC will be stored to your PC.

How to write the EEPROM data which was stored in your PC to EEPROM IC
When it becomes impossible to adjust during service and adjustment, write the EEPROM data which was stored in your PC to EEPROM IC as follows. And readjust the camcorder.

1. Start up the PC-EVR Adjustment Program.
2. Select "1. Read (Save)/Write All EEPROM datas." in Main menu, and then press "Enter" key.
3. Select "2. Data write using stored file" in Read (Save)/Write All EEPROM datas menu, and then press "Enter" key.
4. Input the saved file name, and then press "Enter" key. The data will be written in EEPROM IC.

How to initialize the EEPROM IC
When the EEPROM IC (IC306) or Main C.B.A. is replaced, be sure to write the initial data to EEPROM IC. And adjust the camcorder.

1. Start up the PC-EVR Adjustment Program.
2. Select "1. Read (Save)/Write All EEPROM datas." in Main menu, and then press "Enter" key.
3. Select "3. Data write with initial data" in Read (Save)/Write All EEPROM datas menu, and then press "Enter" key. And press "Enter" key once again. The initial data will be written in EEPROM IC.

6.1.10. HOW TO ACCESS THE MANUAL TRACKING CONTROL

Press the UP▲(Tracking Up) or Down▼(Tracking Down) button to perform the Manual Tracking Adjustment in Playback Mode.

6.1.11. REPLACEMENT PROCEDURE FOR LEADLESS (CHIP) COMPONENT

The following procedures are recommended for the replacement of the leadless components used in this Unit.

1. Preparation for replacement
   A. Soldering Iron
      Use a pencil-type soldering iron using less than 30 watts.
   B. Solder

Eutectic Solder (Tin 63 %, Lead 37 %) is recommended.

C. Soldering time

Do not apply heat for more than 4 seconds.

D. Preheating

Leadless capacitor must be preheated before installation. (130 °C ~ 150 °C, for about 2 minutes.)

Note:

A. Leadless component must not be reused after removal.

B. Excessive mechanical stress and rubbing of the component electrode must be avoided.

2. Removing the leadless component

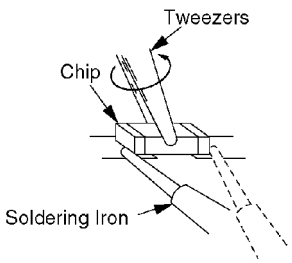
Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes is melted, remove leadless component with a twisting motion.

Note:

A. Do not attempt to lift the component off the board until the component is completely disconnected from the board by a twisting action. The leadless component is attached to the PCB with glue. So carefully twist the component when removing it so as not to break or damage any fail under the component.

B. Take care not to break the copper foil on the printed board.

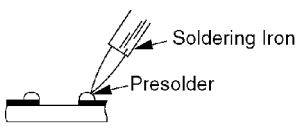
Fig. 6-1



3. Installation of the leadless component

A. Presolder the contact points of the circuit board.

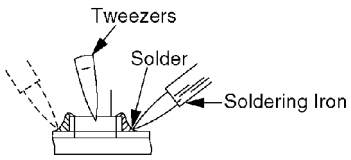
Fig. 6-2



B. Press the part downward with tweezers and solder both

electrodes as shown below.

Fig. 6-3



Note:

Do not glue the replacement leadless component to the circuit board.

6.1.12. SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handlings techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

6.1.13. MODEL NO. IDENTIFICATION MARK

Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

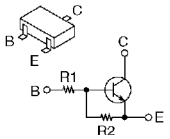
MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA
		NOT USED	Z

Note:

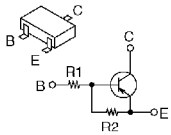
1. **For distinguishing marks A from AA, D from DA, etc., / refer to "MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.**
2. **Refer to Item 3 of Schematic Diagram Notes of Schematic Diagram and Circuit Board Layout Notes, for Mark "Z."**

6.2. IC, TRANSISTOR AND CHIP PART INFORMATION

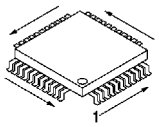
GENERAL C.B.A. / ASS'Y PARTS



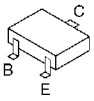
UN5211(R1=10K, R2=10K),
UN5212(R1=22K, R2=22K),
UN5213(R1=47K, R2=47K),
UN5215(R1=10K, R2=OPEN),
UN5217(R1=22K, R2=OPEN),
DTC114EU(R1=10K, R2=10K),
DTC114TU(R1=10K, R2=OPEN),
DTC124EU(R1=22K, R2=22K),
DTC124TU(R1=22K, R2=OPEN),
DTC144EU(R1=47K, R2=47K)



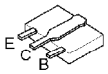
UN5111(R1=10K, R2=10K),
UN5112(R1=22K, R2=22K),
UN5113(R1=47K, R2=47K),
UN5115(R1=10K, R2=OPEN),
UN5114(R1=10K, R2=47K),
DTA124EU(R1=22K, R2=22K),
DTA144EU(R1=47K, R2=47K),
DTA114EU(R1=10K, R2=10K),
DTA114TU(R1=10K, R2=OPEN),
DTA114YU(R1=10K, R2=47K)



AN2109NFHQ, AN2401NFH
AN2536FHQ, BA9737KV
AN2545FHQ, HD2224TE2,
AN3897FH, BA7757BK,
MN67324, MN5293-1,
MN101D02FWA1, AN2545NFHQ

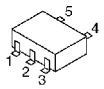


2SC4215, 2SA1576A106R,
2SB1424T100Q, 2SB1424T100P,
2SB1585, 2SB1218A, 2SB970,
CPH3115, CPH3016, 2SC2412K,
2SC4081T106R, 2SD1819A, 2SD602,
2SD601A, 2SD2432, 2SD2351,
2SA2010, 2SA2046, 2SD602A



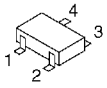
2SD1119,
2SD2150T100R,
2SB1628-T1ZX,
2SB1628-T1ZY,
2SA2011

LCD C.B.A.

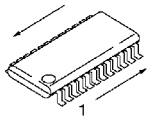


TA75S558FTEL

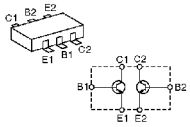
MAIN C.B.A.



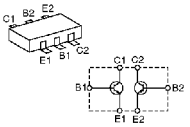
S80839ANNPT2, R3111Q391ATR,
XC61CN3902NR, RST3439UR



BA6417F-E2, BA10324AFVE1,
BR9040FV-DE2, MN3112SA-E1,
MN38663S, S3510AEFJTB,
LB1837MLTEL3,
LB1837M-TE-L,UN224-TX

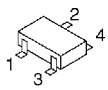


XP4501, HN1C01F,UMX1NTR



XP4601, HN1B04FU

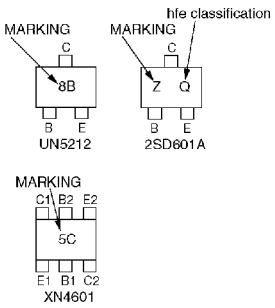
XC62FP4502PR



CNB10010RL

HOW TO READ THE IDENTIFICATION MARK OF CHIP COMPONENTS.

MARKING	PART NO.	MARKING	PART NO.
AS	2SA2010	1R	2SB1585
B	2SB1218A	8H	UN5217
B	2SC4081T106R	5H	XP4501
C	DTA144EU	5C	XP4601
T	2SD1119	6B	UN5112
W	2SD602	8HR	DTC124TU
Z	2SD601A	8E	UN5215
Z	2SD1819A	8A	UN5211
ZX	2SB1628	6D	UN5114
ZY	2SB1628	04	DTC114TU
1R	2SB970	24	DTC114EU
6A	UN5111	X1	UMX1NTR
6C	UN5113	1B	MA111
6E	UN5115	12H	MA3120WA
8B	UN5212	MU	MA142WK



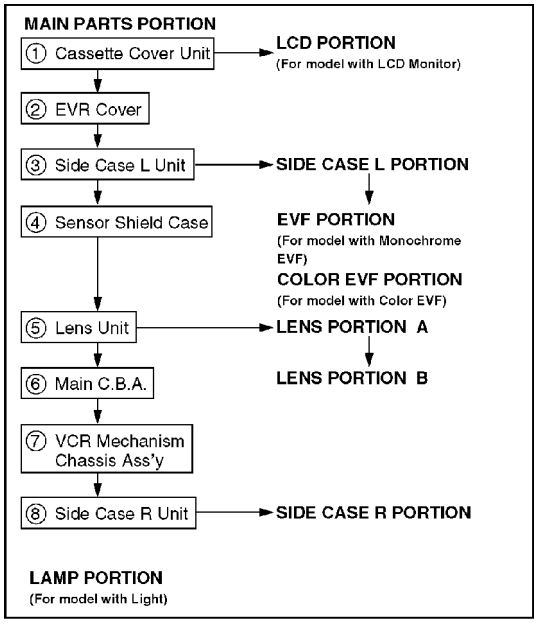
7. DISASSEMBLY/ASSEMBLY PROCEDURES

7.1. CABINET SECTION

7.1.1. Disassembly Flowchart

This flow chart indicates the disassembly steps of the cabinet parts and the P.C.Boards in order to gain access to item (s) to be serviced. When reassembling, perform the step (s) in the reverse order. Bend, route and dress the wires as they were originally.

Fig. D1



Note :

1. **When removing the cabinet, work with care so as not to break the Locking Tabs.**
2. **Place a cloth or some other soft material under the P.C. Boards or Unit to prevent damage.**
3. **When reinstalling, ensure that the connectors are connected and electrical components have not been damaged.**
4. **Do not supply power to the unit during disassembly and reassembly.**

7.1.2. MAIN PARTS PORTION

STEP /LOC. No.	PART	Fig. No.	REMOVE
①	Cassette Cover Unit	D2	2(L-1), (L-2), FP9001
②	EVR Cover	D3	(617)
③	Side Case L Unit	D3	4(633), (588), 3(604), Top Operation receptacle, P3
④	Sensor Shield Case	D4	(504)
⑤	Lens Unit	D4	2(536), (L-3), FP8, FP9
⑥	Main C.B.A.	D5	2(421), (473), FP1, FP2, FP3, FP6, FP7, FP10, FP11
⑦	VCR Mechanism Chassis Ass'y	D6	2(473), (533)
⑧	Side Case R Unit	D6	----------

A B C D

How to read chart shown above:

A: Order of Procedure steps.

When reassembling, perform steps(s) in reverse order. These numbers are also used as the identification (location) No. of parts in Figures.

B: Part to be removed or installed.

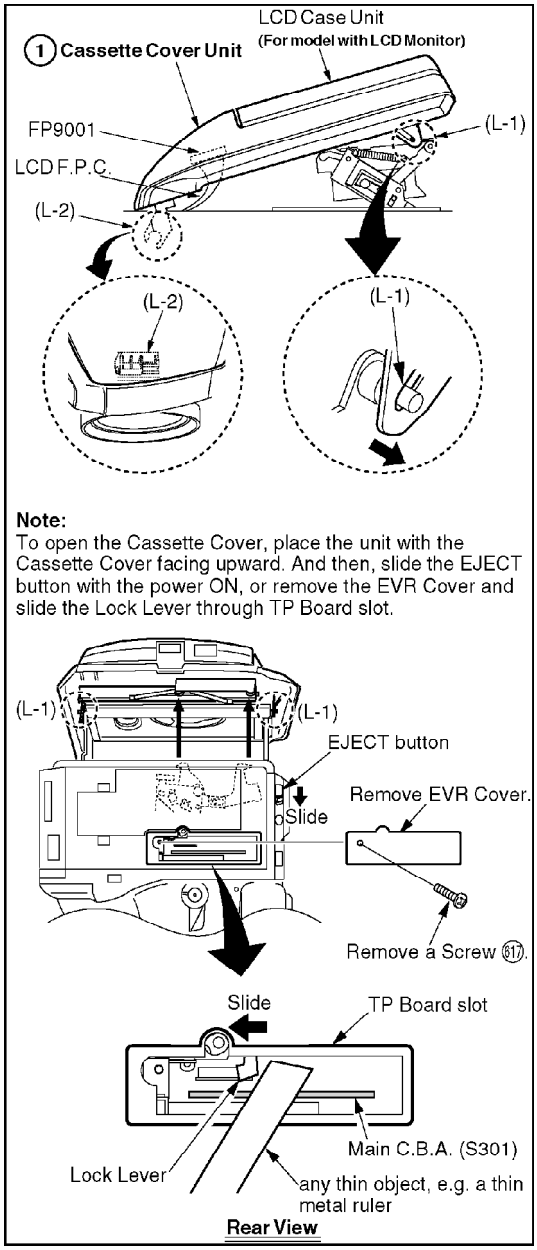
C: Fig. No. showing Procedure or Part Location.

D: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or unsoldered.

2(L-1) = 2 Looking Tabs (L-1)

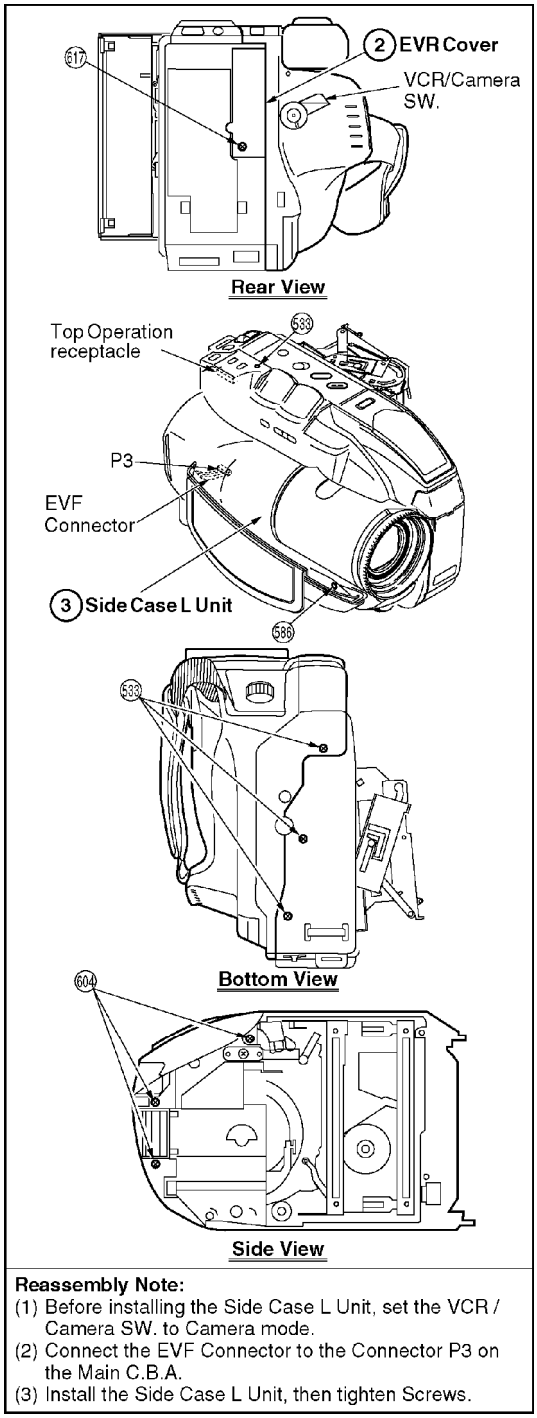
7.1.2.1. Cassette Cover Unit

Fig. D2



7.1.2.2. EVR Cover, Side Case L Unit

Fig. D3

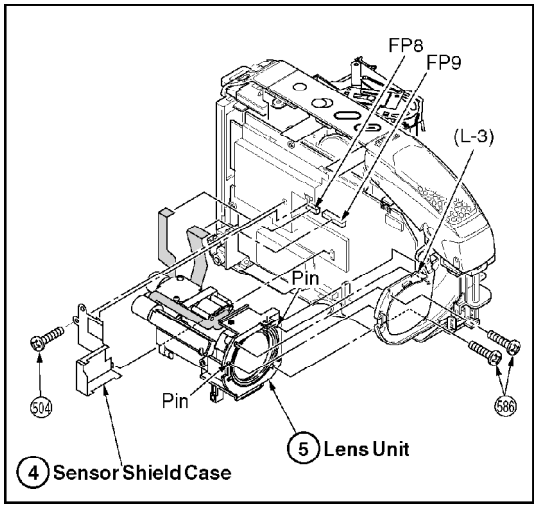


Reassembly Note:

(1) Before installing the Side Case L Unit, set the VCR / Camera SW. to Camera mode.
(2) Connect the EVF Connector to the Connector P3 on the Main C.B.A.
(3) Install the Side Case L Unit, then tighten Screws.

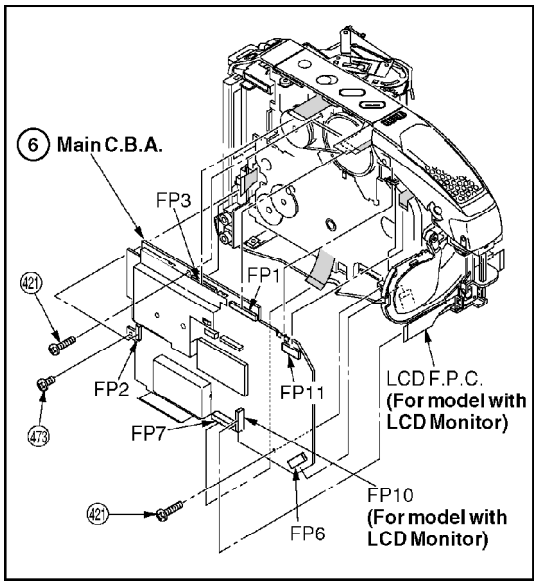
7.1.2.3. Sensor Shield Case, Lens Unit

Fig. D4



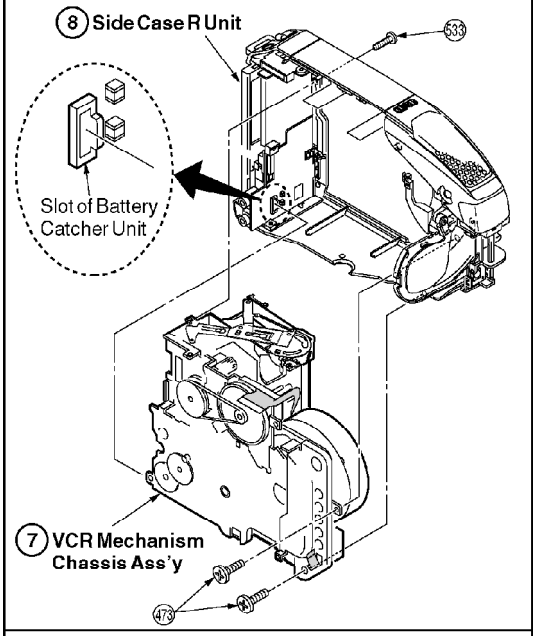
7.1.2.4. Main C.B.A.

Fig. D5



7.1.2.5. VCR Mechanism Chassis Ass'y, Side Case R Unit

Fig. D6



Reassembly Note:
The VCR Mechanism Chassis Ass'y is supplied with a Lock Screw installed. Make sure to remove the Lock Screw from Cassette Up Unit when replacing the VCR Mechanism Chassis Ass'y.

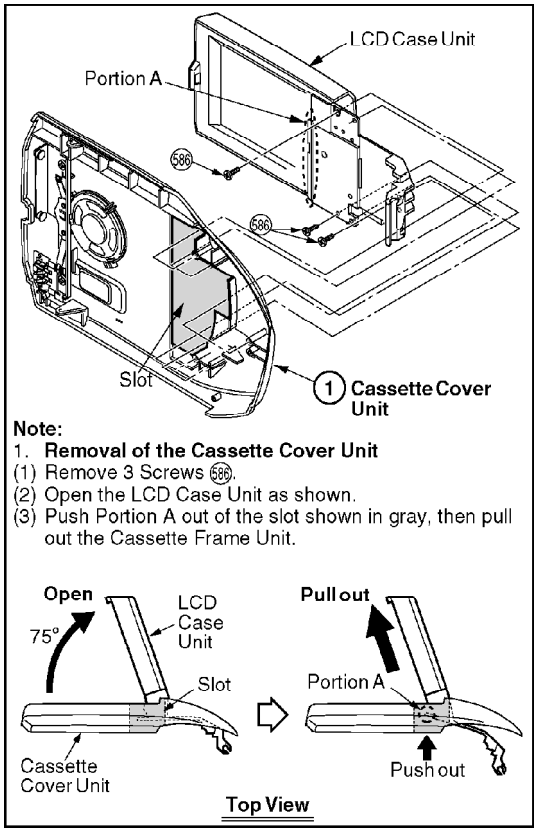
7.1.3. LCD PORTION

(For model with LCD Monitor)

STEP /LOC. No.	PART	Fig. No.	REMOVE
①	Cassette Cover Unit	D7-1	3 (586)
②	Relay C.B.A.	D7-2	2(L-1), FP9002
③	Cassette Frame	D7-2	2 (586)
④	LCD Case A Unit	D7-3	2 (469), 5(L-2)
⑤	LCD Shaft Unit	D7-4	FP1201
⑥	LCD Case B	D7-4	2 (586)
⑦	LCD C.B.A.	D7-5	FP9001, Unsolder
⑧	LCD Panel Unit	D7-5	8(L-3)
⑨	LCD Lamp Unit	D7-6	3(L-4), LCD Sheet Unit

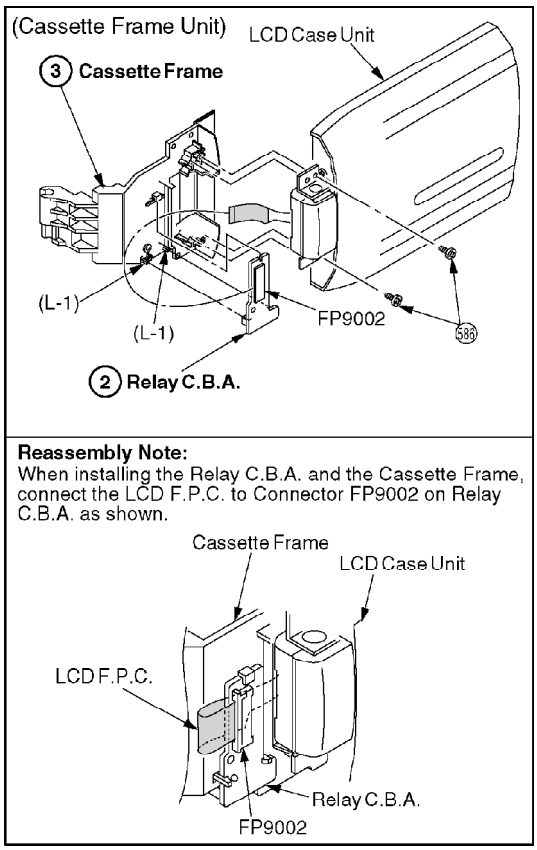
7.1.3.1. Cassette Cover Unit

Fig. D7-1



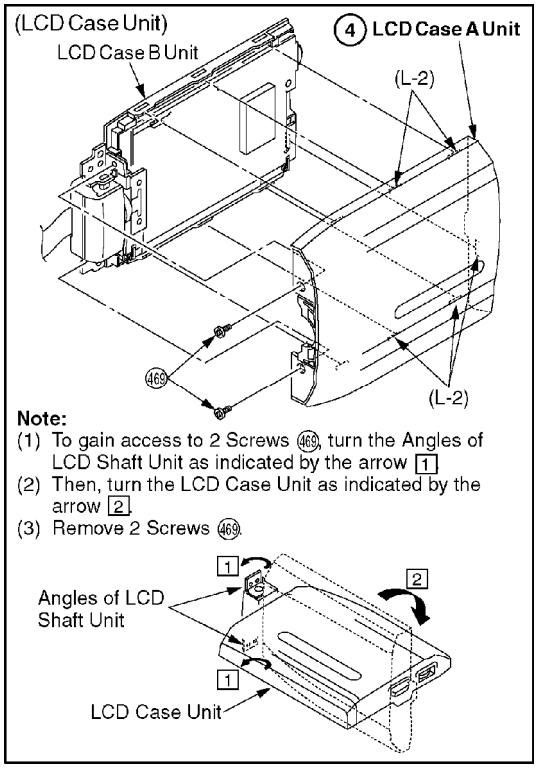
7.1.3.2. Relay C.B.A., Cassette Frame

Fig. D7-2



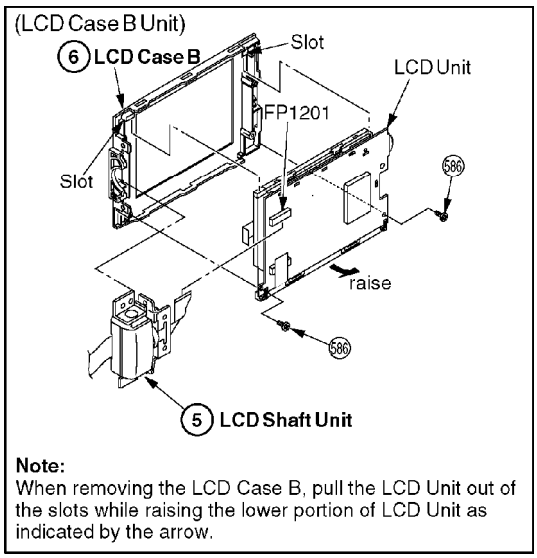
7.1.3.3. LCD Case Unit

Fig. D7-3


(LCD Case Unit)
LCD Case B Unit
4 LCD Case A Unit
(L-2)
469
(L-2)
Note:
(1) To gain access to 2 Screws 469, turn the Angles of LCD Shaft Unit as indicated by the arrow 1
(2) Then, turn the LCD Case Unit as indicated by the arrow 2
(3) Remove 2 Screws 469
1
2
Angles of LCD Shaft Unit
1
LCD Case Unit

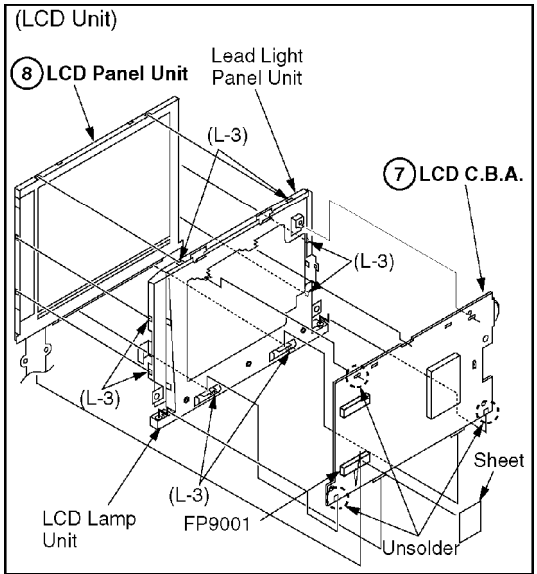
7.1.3.4. LCD Shaft Unit, LCD Case B

Fig. D7-4


(LCD Case B Unit)
6 LCD Case B
Slot
LCD Unit
FP1201
Slot
586
raise
586
5 LCD Shaft Unit
Note:
When removing the LCD Case B, pull the LCD Unit out of the slots while raising the lower portion of LCD Unit as indicated by the arrow.

7.1.3.5. LCD C.B.A., LCD Panel Unit

Fig. D7-5

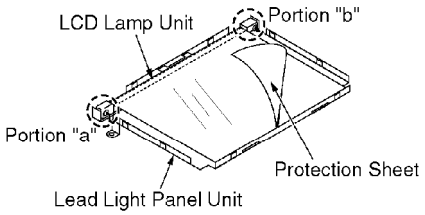


Reassembly Note:

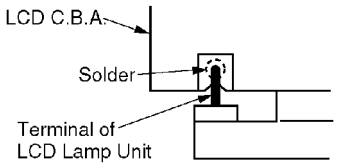
(1) When replacing the Lead Light Panel Unit, make sure to remove Protection Sheet as shown below.

(2) Use extreme care when handling the Lead Light Panel Unit and the LCD Panel Unit to avoid damage, dust, and spots (especially fingerprints, etc.).
The use of clean cotton gloves when available is highly recommended.

(3) Be careful not to apply any pressure to Portion "a" and "b" of the LCD Lamp Unit as shown below.

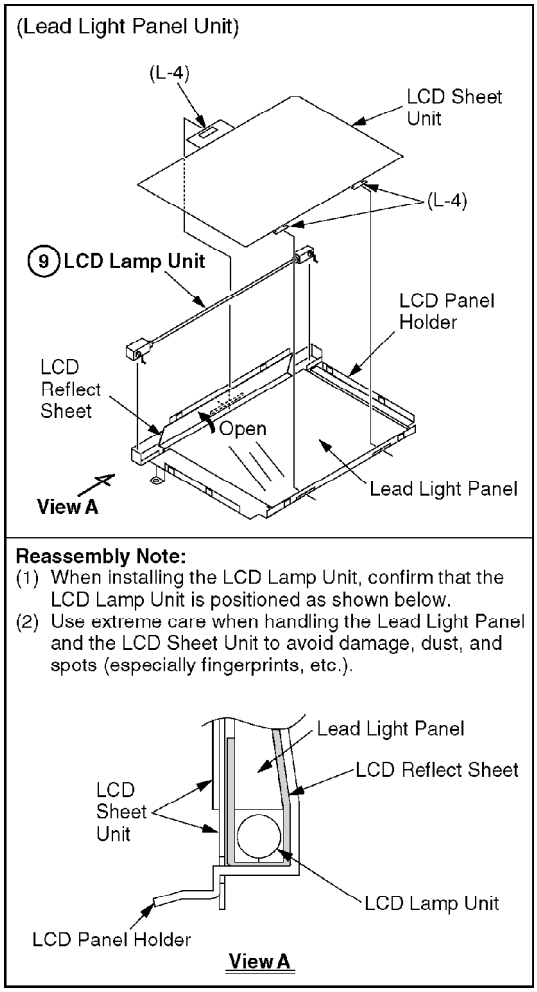


(4) After replacing the Lead Light Panel Unit, confirm that the Terminal of LCD Lamp Unit is soldered correctly as shown below.



7.1.3.6. LCD Lamp Unit

Fig. D7-6

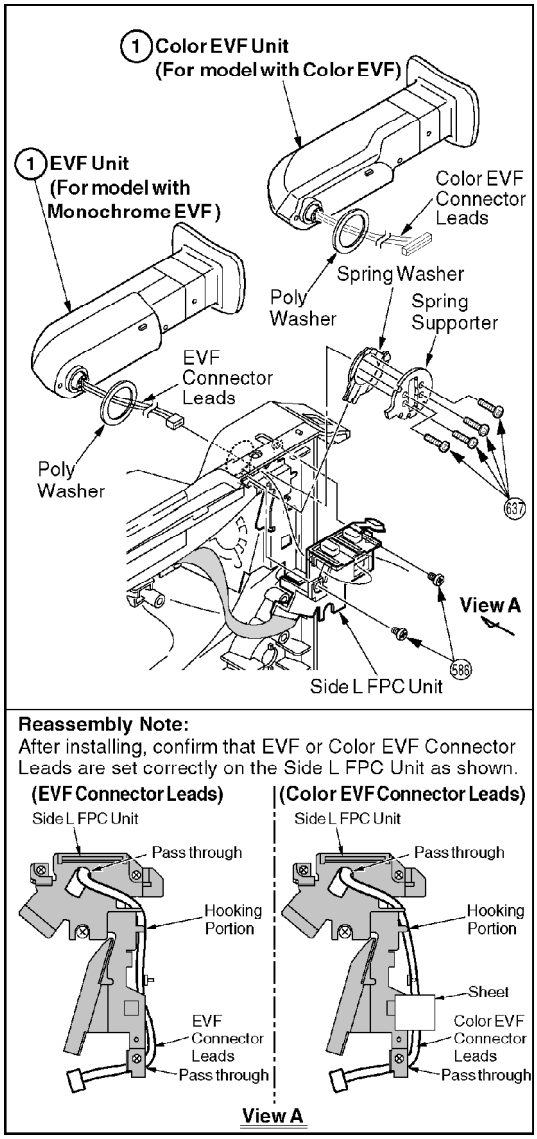

(Lead Light Panel Unit)
(L-4)
LCD Sheet Unit
(L-4)
9 LCD Lamp Unit
LCD Panel Holder
LCD Reflect Sheet
Open
Lead Light Panel
View A
Reassembly Note:
(1) When installing the LCD Lamp Unit, confirm that the LCD Lamp Unit is positioned as shown below.
(2) Use extreme care when handling the Lead Light Panel and the LCD Sheet Unit to avoid damage, dust, and spots (especially fingerprints, etc.).
Lead Light Panel
LCD Reflect Sheet
LCD Sheet Unit
LCD Lamp Unit
LCD Panel Holder
View A

7.1.4. SIDE CASE L PORTION

STEP /LOC. No.	PART	Fig. No.	REMOVE
①	EVF Unit/Color EVF Unit	D8-1	2 (588), 4 (637), Spring Supporter, Spring Washer, Poly Washer
②	Side L FPC Unit	D8-2	4 (588), 2(L-1), Arm, Arm Holder

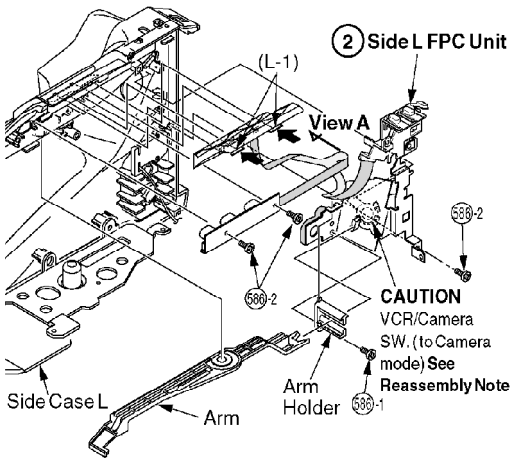
7.1.4.1. EVF Unit/Color EVF Unit

Fig. D8-1



7.1.4.2. Side L FPC Unit

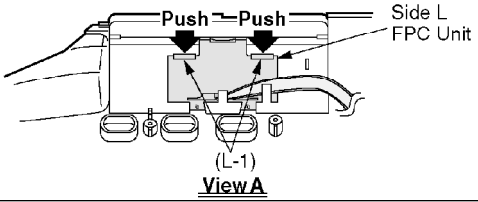
Fig. D8-2



Note:

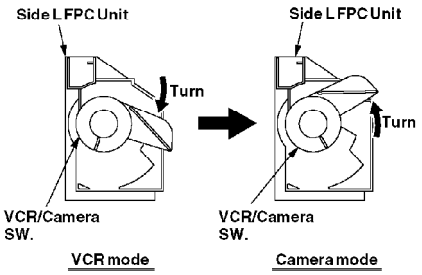
1. **Removal of the Side L FPC Unit**

(1) Remove the Arm first.
(2) Remove a Screw 586-1. Then, remove the Arm Holder.
(3) Remove 3 Screws 586-2.
(4) Remove the Side L FPC Unit after releasing 2 Locking



Reassembly Note:

When installing the Side L FPC Unit, be sure to set the VCR/Camera SW. to Camera mode:
(To do this, turn the VCR/Camera switch on the Side L FPC Unit in the direction of the arrow as far as possible to become VCR mode. Then, turn the VCR/Camera switch as it snaps twice to become Camera mode as shown.)



CAUTION:

The Side Case L FPC Unit may be damaged if it is installed except for Camera mode.
Be sure to make it Camera mode before installing.

7.1.5. EVF PORTION

(For model with Monochrome EVF)

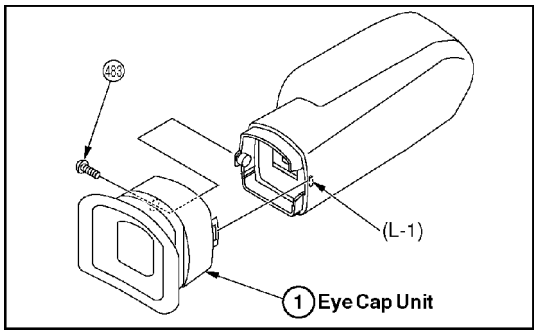
STEP /LOC. No.	PART	Fig. No.	REMOVE
①	Eye Cap Unit	D9-1	㊸, (L-1)
②	EVF Case A	D9-2	2㊷, 5(L-2)
③	EVF Dust Cover	D9-2	-----
④	EVF Case B	D9-2	-----
⑤	VCR Operation Unit	D9-3	FP901
⑥	CRT	D9-3	CRT Socket Unit
⑦	Deflection Yoke	D9-3	P903
⑧	EVF C.B.A.	D9-3	-----

Note:

When disassembling or reassembling, make sure that no dust gets in EVF Unit.

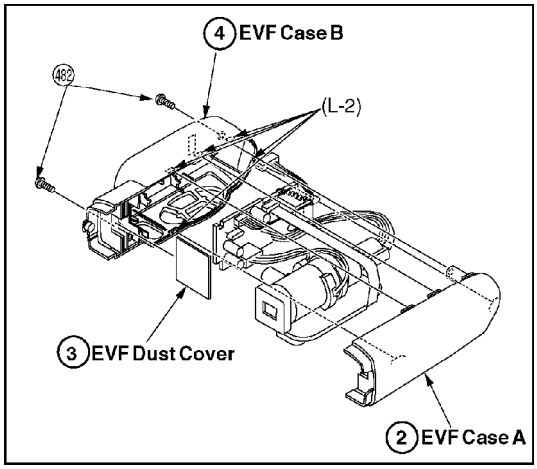
7.1.5.1. Eye Cap Unit

Fig. D9-1



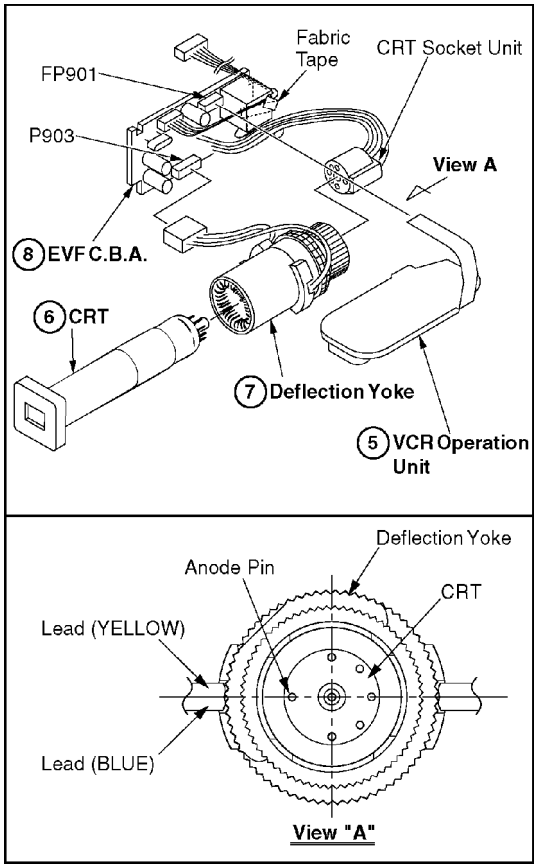
7.1.5.2. EVF Case A, EVF Dust Cover, EVF Case B

Fig. D9-2



7.1.5.3. VCR Operation Unit, CRT, Deflection Yoke, EVF C.B.A.

Fig. D9-3



7.1.6. COLOR EVF PORTION

(For model with Color EVF)

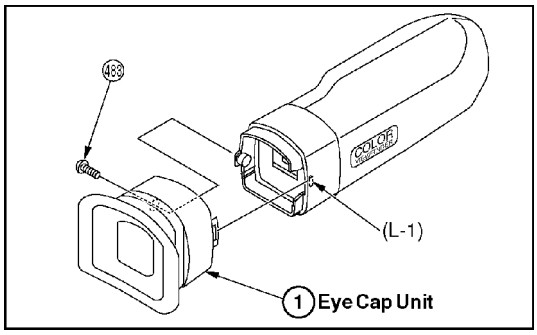
STEP /LOC. No.	PART	Fig. No.	REMOVE
①	Eye Cap Unit	D10-1	㊸, (L-1)
②	EVF Case A	D10-2	2㊷, 4(L-2)
③	EVF Case B	D10-2	-----
④	EVF ESD Plate	D10-2	-----
⑤	VCR Button	D10-2	-----
⑥	Operation Plate	D10-2	-----
⑦	EVF Plate	D10-2	-----
⑧	P.C.B. Holder	D10-3	4(L-2)
⑨	EVF Connector	D10-3	P901
⑩	Color EVF C.B.A.	D10-3	FP901
⑪	EVF Protect A	D10-3	2(L-3)
⑫	EVF LCD Holder	D10-3	-----
⑬	LCD Panel	D10-3	-----
⑭	LED Lens	D10-3	-----
⑮	LED Diffusion Plate	D10-3	-----
⑯	Protect Plate	D10-3	-----

Note:

When disassembling or reassembling, make sure that no dust gets in Color EVF Unit.

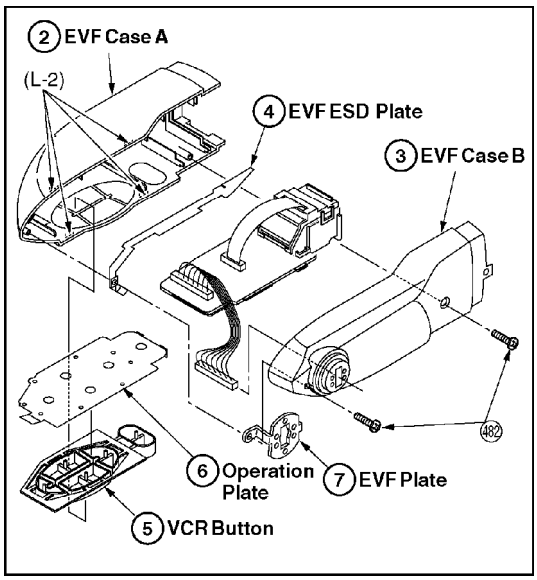
7.1.6.1. Eye Cap Unit

Fig. D10-1



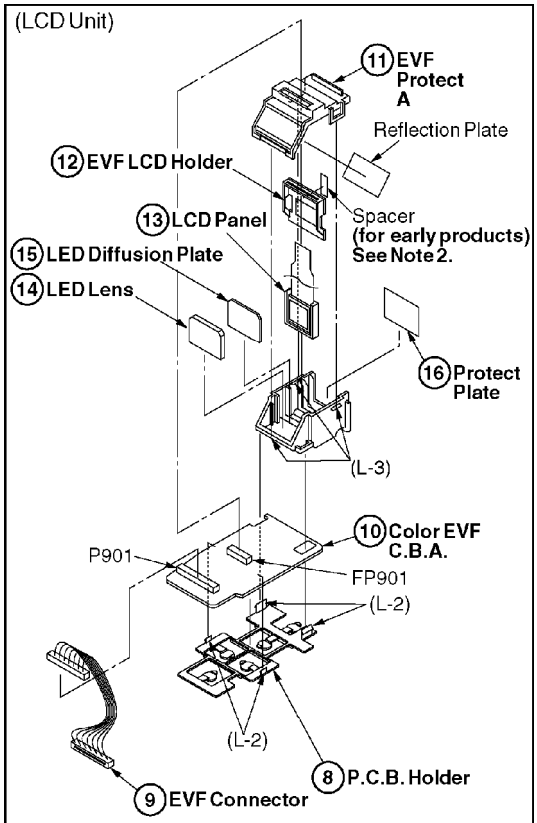
7.1.6.2. EVF Case A, EVF Case B, EVF ESD Plate, VCR Button, Operation Plate, EVF Plate

Fig. D10-2



7.1.6.3. P.C.B. Holder, EVF Connector, Color EVF C.B.A., EVF Protect A, EVF LCD Holder, LCD Panel, LED Lens, LED Diffusion Plate, Protect Plate

Fig. D10-3



Note:

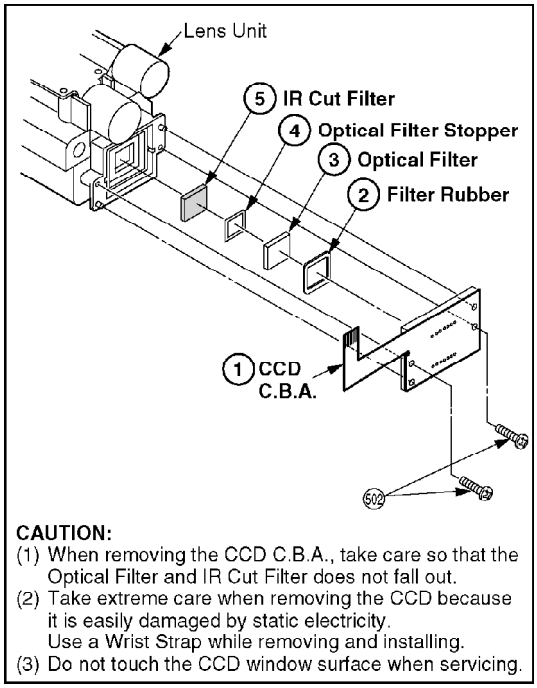
1. Use extreme care when handling the LCD Panel to avoid damage, dust, and spots (especially fingerprints, etc.).
2. **Notes for PV-D301, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, PV-L651, PV-L661, PV-L681, PV-L61, VM-L451**
   This Spacer is found on early products only **(Model: AA, DA, etc.)**.
   Refer to "MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL."

7.1.7. LENS PORTION A

STEP /LOC. No.	PART	Fig. No.	REMOVE
①	CCD C.B.A.	D11-1	2 ⑤⑫
②	Filter Rubber	D11-1	-----
③	Optical Filter	D11-1	-----
④	Optical Filter Stopper	D11-1	-----
⑤	IR Cut Filter	D11-1	-----

7.1.7.1. CCD C.B.A., Filter Rubber, Optical Filter, Optical Filter Stopper, IR Cut Filter

Fig. D11-1



CAUTION:
(1) When removing the CCD C.B.A., take care so that the Optical Filter and IR Cut Filter does not fall out.
(2) Take extreme care when removing the CCD because it is easily damaged by static electricity.
Use a Wrist Strap while removing and installing.
(3) Do not touch the CCD window surface when servicing.

Fig. D11-2

Reassembly Note:

1. **Installation of IR Cut Filter, Optical Filter Stopper, Optical Filter, Filter Rubber, CCD C.B.A.**
   Install in order shown below.

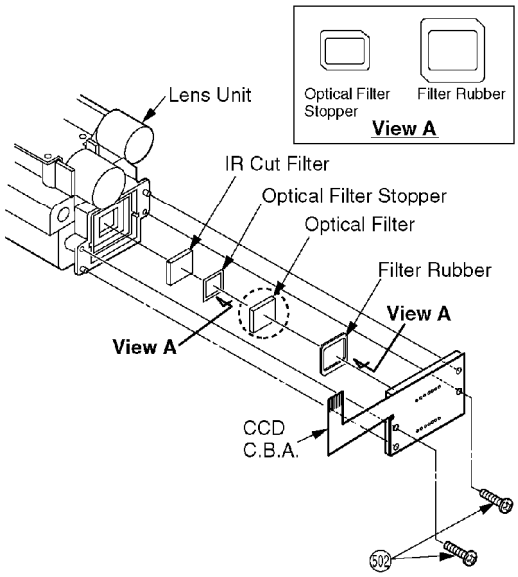
(1) Install the IR Cut Filter in the Lens Unit correctly.
Note:
Make sure that no dust gets on the IR Cut Filter and in the Lens Unit. Clean the IR Cut Filter with lens cleaning paper dampened with lens cleaner if necessary.

(2) Install the Optical Filter Stopper on the IR Cut Filter correctly as shown below.
Note:
Make sure that no dust gets on the Optical Filter Stopper.

(3) Install the Optical Filter on the Optical Filter Stopper correctly as shown below.
Note:
Make sure that no dust gets on the Optical Filter and in the Lens Unit. Clean the Optical Filter with lens cleaning paper dampened with lens cleaner if necessary.

(4) Install the Filter Rubber on the Optical Filter correctly as shown below.
Note:
Make sure that no dust gets on the Filter Rubber.

(5) Install the CCD C.B.A. to the Lens Unit. Then, secure 2 Screws (502) while keeping the CCD C.B.A. pressed toward the upper right corner.
Note:
Do not touch the Lens Surface. Clean their surface with lens cleaning paper dampend with lens cleaner

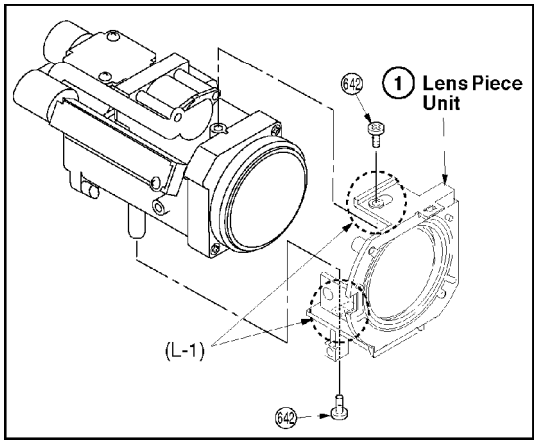


7.1.8. LENS PORTION B

STEP /LOC. No.	PART	Fig. No.	REMOVE
①	Lens Piece Unit	D12-1	2 (642), 2(L-1)
②	Focus Motor Unit	D12-2	2 (501), Unsolder
③	Zoom Motor Unit	D12-2	2 (501), Unsolder

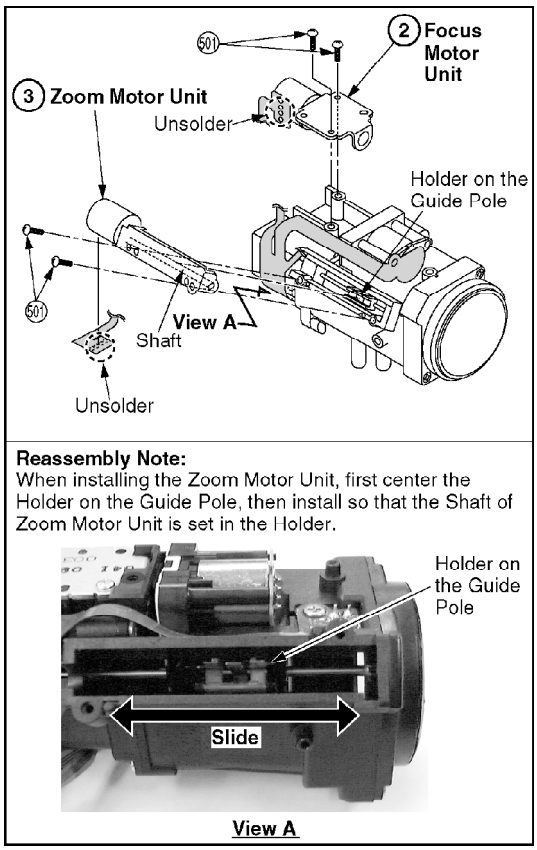
7.1.8.1. Lens Piece Unit

Fig. D12-1



7.1.8.2. Focus Motor Unit, Zoom Motor Unit

Fig. D12-2

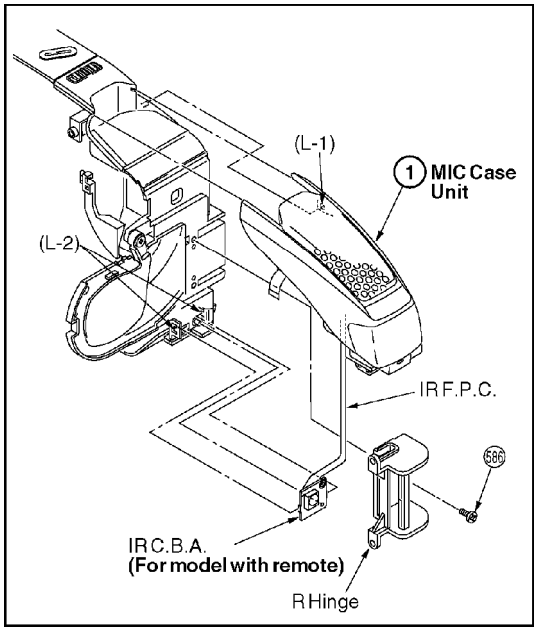

501
2 Focus Motor Unit
3 Zoom Motor Unit
Unsolder
Holder on the Guide Pole
501
View A
Shaft
Unsolder
Reassembly Note:
When installing the Zoom Motor Unit, first center the Holder on the Guide Pole, then install so that the Shaft of Zoom Motor Unit is set in the Holder.
Holder on the Guide Pole
Slide
View A

7.1.9. SIDE CASE R PORTION

STEP /LOC. No.	PART	Fig. No.	REMOVE
①	MIC Case Unit	D13-1	586, (L-1), 2(L-2), R Hinge
②	Top Operation Unit	D13-2	472, (L-3)
③	Battery Catcher Unit	D13-3	580, Buckup Cover, Battery

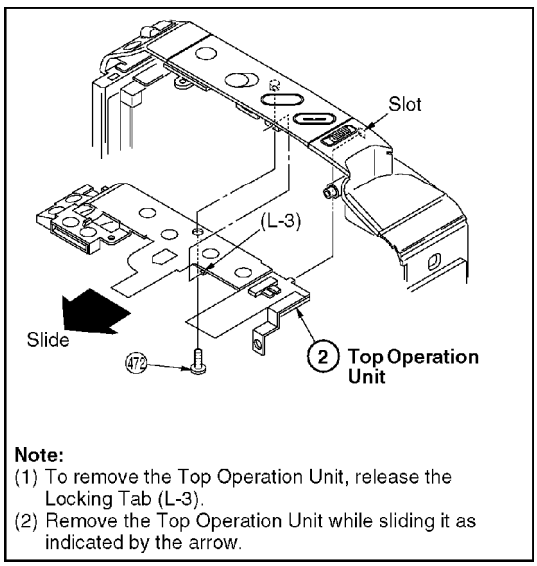
7.1.9.1. MIC Case Unit

Fig. D13-1



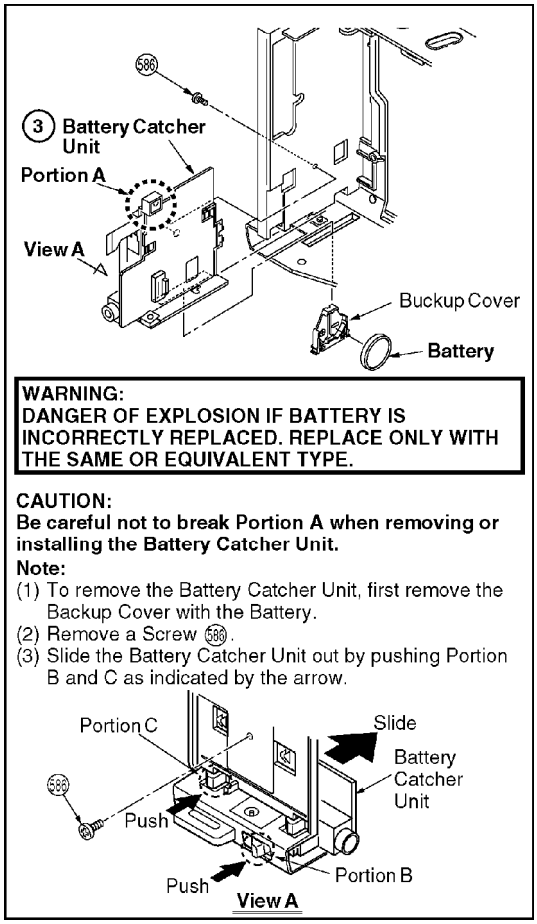
7.1.9.2. Top Operation Unit

Fig. D13-2


Slot
(L-3)
Slide
472
2 Top Operation Unit
Note:
(1) To remove the Top Operation Unit, release the Locking Tab (L-3).
(2) Remove the Top Operation Unit while sliding it as indicated by the arrow.

7.1.9.3. Battery Catcher Unit

Fig. D13-3


586
3 Battery Catcher Unit
Portion A
View A
Buckup Cover
Battery
WARNING:
DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE.
CAUTION:
Be careful not to break Portion A when removing or installing the Battery Catcher Unit.
Note:
(1) To remove the Battery Catcher Unit, first remove the Backup Cover with the Battery.
(2) Remove a Screw 586.
(3) Slide the Battery Catcher Unit out by pushing Portion B and C as indicated by the arrow.
Portion C
Slide
Battery Catcher Unit
586
Push
Push
Portion B
View A

7.1.10. LAMP PORTION

(For model with Light)

DANGER:
When replacing the Lamp, use only Lamp (Part No. VLLW0015) supplied by Panasonic to reduce the risk of fire.
Use a cloth or tissue when handling the Lamp as finger oils will decrease the Lamp life.
To prevent possible burn hazard, remove the Light Cover and allow the Lamp to cool before replacing.

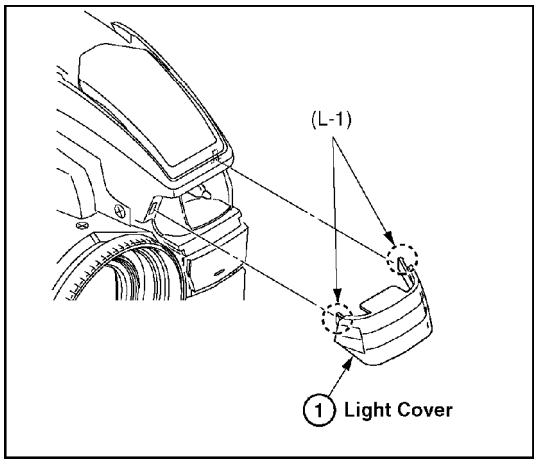
Note:

1. **Lamp is supplied as a Lamp Kit only (Kit No. VULS0001) which contains Lamp, Cushions, and Explanation Sheet.**
2. **For more details of the Lamp replacement, refer to the Explanation Sheet in the Lamp Kit (VULS0001).**

STEP /LOC. No.	PART	Fig. No.	REMOVE
①	Light Cover	D14-1	2(L-1)
②	Lamp	D14-2	----------

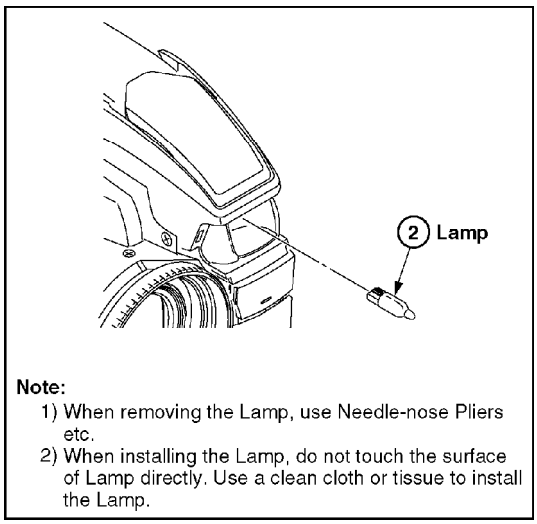
7.1.10.1. Light Cover

Fig. D14-1



7.1.10.2. Lamp

Fig. D14-2



Note:

1) When removing the Lamp, use Needle-nose Pliers etc.
2) When installing the Lamp, do not touch the surface of Lamp directly. Use a clean cloth or tissue to install the Lamp.

7.2. SCREWS FOR DISASSEMBLY/ASSEMBLY OF CABINET

7.3. MECHANISM SECTION

7.3.1. Disassembly Method

This procedure starts with the condition that the cabinet parts and Main C.B.A. have been removed.
When reassembling, perform the step(s) in the reverse order.
Perform all disassembly and alignments procedures in STOP Position except disassembly and alignment procedures which have the special Notes.

STEP LOC. No.	Prior Step (s)	Part	Fig. No.	Remove
①	-	Cassette Up Unit	DM3-1,2	2 (632), 2(L-1)
②	-	Cylinder Unit	DM4-1	3 (638), Hooking Portion
③	-	Not used	-	-
④	2	Cylinder/Head Amp F.P.C.	DM4-2	Connector, FP3501
⑤	2	Bulge Chip	DM4-2	(623)
⑥	-	P.C.B. Angle	DM5	(413)
⑦	-	Mechanism F.P.C. Unit	DM6-1,2	4 (412), Hooking Portion, double-sided adhesive tape, Unsolder Gear Alignment (x1)
⑧	1,9	Tension Unit	DM7-1,2	(411), Hooking Portion
⑨	1,8	Reel Table Unit	DM7-1,2	(419), (410)
⑩	1,8,9	Rev Clutch	DM8	(419)
⑪	1	Take Gear	DM9-1,2	(L-1)
⑫	1,11	Rev Brake Arm Unit	DM9-1,2	(409), Hooking Portion
⑬	-	A/C Head Unit	DM10	(408), Unsolder
⑭	-	Capstan Belt	DM11	-
⑮	6,13,14	Capstan Unit	DM12	3 (407)
⑯	1,6,7,11,12,14	Idler Arm Unit	DM13	(419)
⑰	2	Mechanism Support Angle	DM14	(415)
⑱	1	Reduction Gear B	DM15	(411)
⑲	-	Reduction Gear A	DM16	(419)
⑳	1,18	Reduction Gear Unit	DM16	2 (632)
㉑	1	Pinch Arm Unit	DM17-1,2	(411)
㉒	1	Opener	DM17-1,2	(417)
㉓	1,11,21,22	P5 Arm Unit	DM17-1,2	Hooking Portion
㉔	1,17	Takeup Post Unit	DM18-1,2	(640)
㉕	1	Supply Post Unit	DM18-1,2	(416)
㉖	-	Impedance Roller Unit	DM19-1,2	(419)
㉗	1,2,13,24,25	Loading Base Unit	DM19-1,2	4 (415)
㉘	1,2,8,9,13,24,25,27	Takeup Loading Arm Unit	DM20	- Gear Alignment (x1)
㉙	1,2,8,9,13,24,25,27	Supply Loading Arm Unit	DM21-1,2,3	- Gear Alignment (x2)
㉚	8,9,19	Loading Motor Unit	DM22	2 (414)
㉛	1,2,8,9,10,18,19,20,24,25,27,29,30	Main Cam Unit	DM22	-
㉜	1,2,8,9,10,18,19,20,24,25,27,29,30,31	Pinch Toggle	DM22	-

A B C D E

How to read chart shown above:
A: Order of Procedure steps.
When reassembling, perform steps(s) in reverse order.
These numbers are also used as the identification (location) No. of parts in Figures.
B: Steps to be completed prior to the current step.
C: Part to be removed or installed.
D: Fig. No. showing Procedure or Part Location.
E: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or unsoldered.
2(L-1) =2 Looking Tabs (L-1)

CAUTION:
a. Use a wrist strap to provide ESD protection while disassembling or assembling.
b. Removed Cut Washer is not reusable. If removed, install a new one.
Following Cut Washers are to be used:

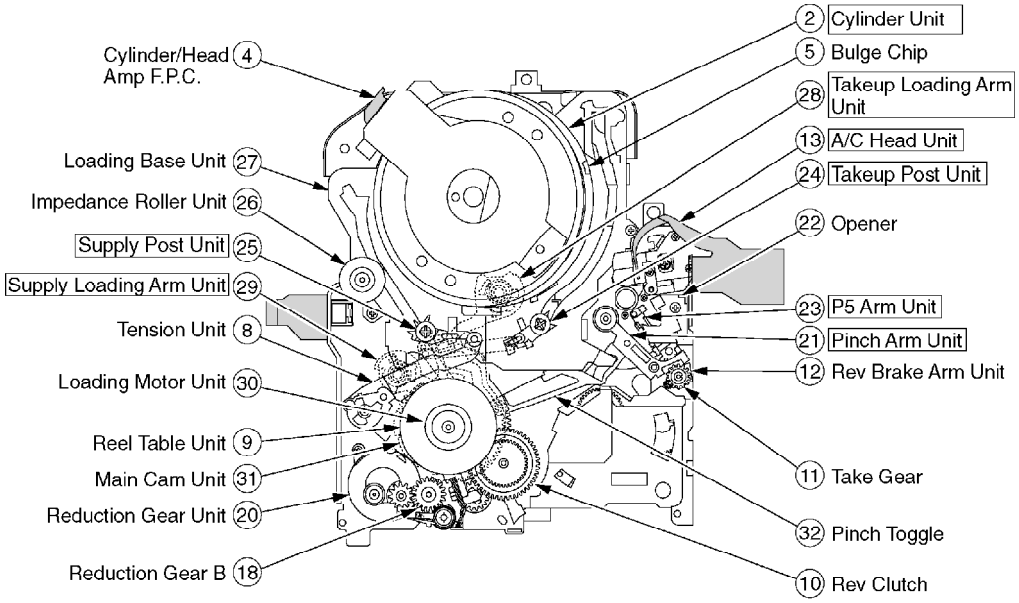
Ref. No.	Part No.
(408)	VMXW0217
(411)	VMXW0213
(419)	VMX2026

7.3.2. Inner Parts Location

Note:
BOX indicates alignment (Gear alignment or Tape Interchangeability adjustment) required when a part is replaced.

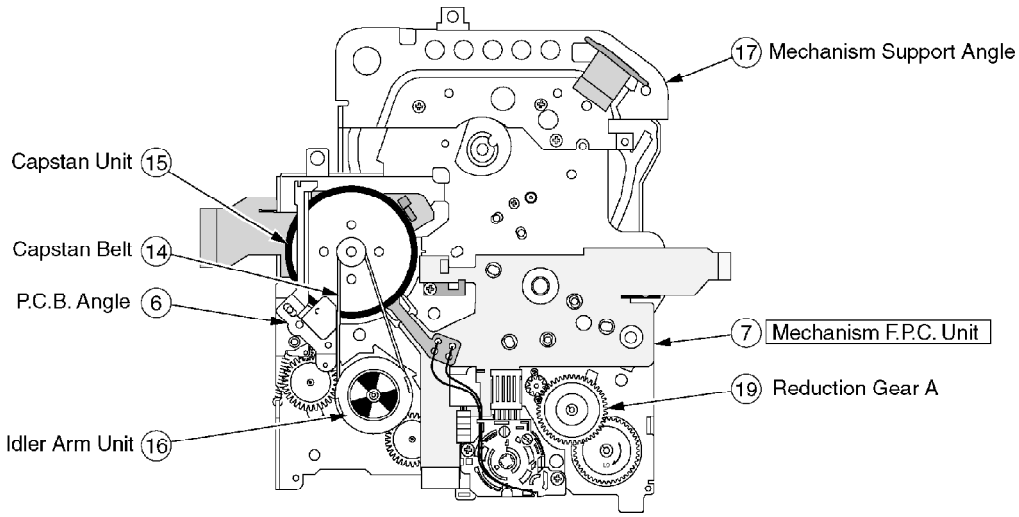
7.3.2.1. TOP VIEW

Fig. DM1-1



7.3.2.2. BOTTOM VIEW

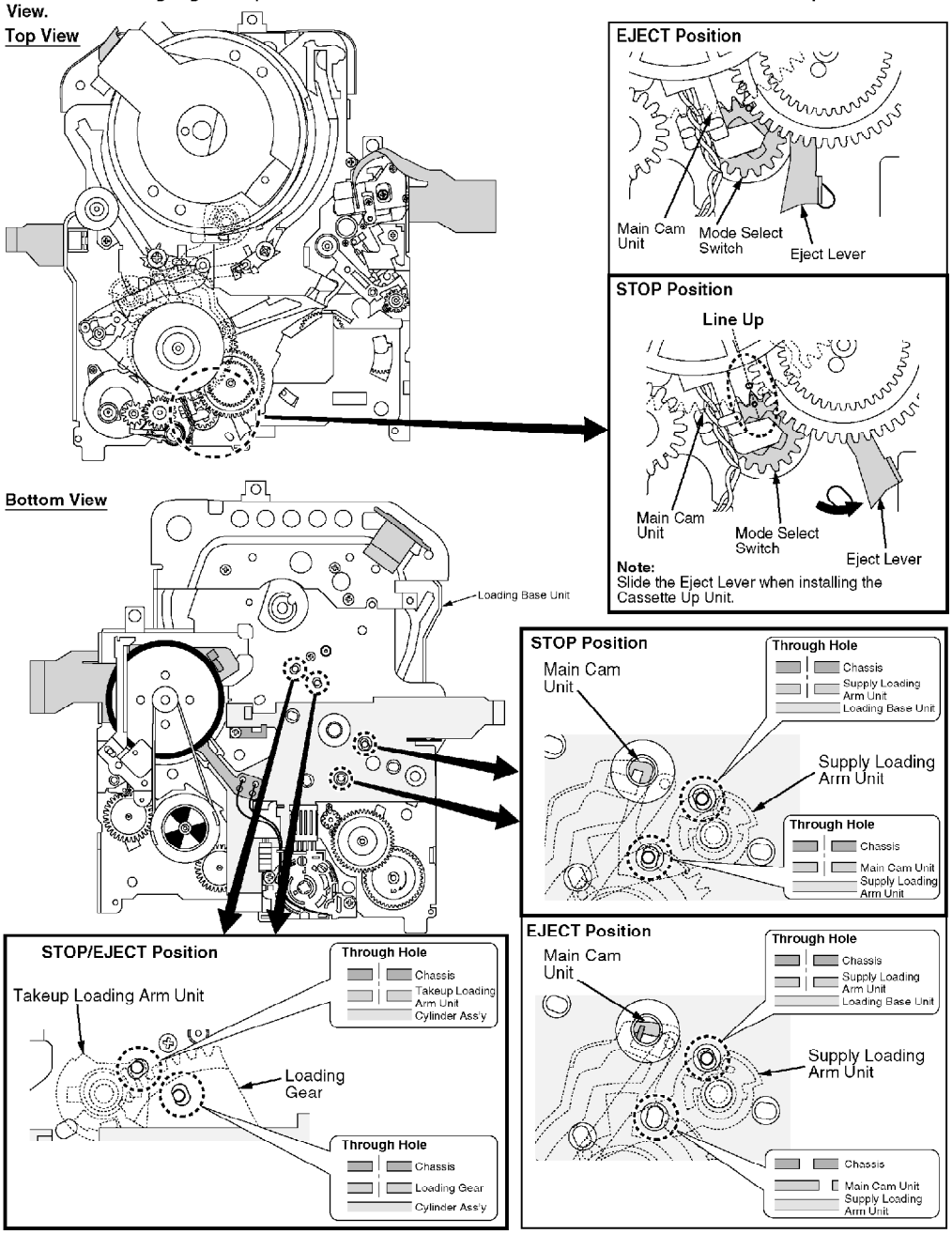
Fig. DM1-2



7.3.3. STOP Position Confirmation

Fig. DM2

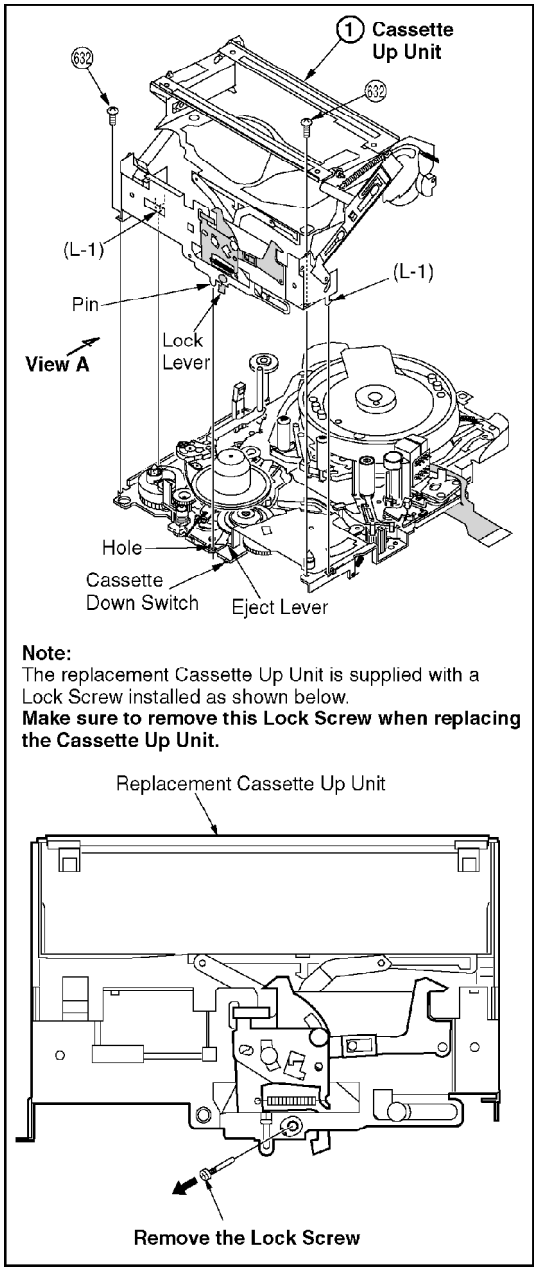
Check the following alignment points to confirm that the Mechanism is in STOP Position from the Top and Bottom View.



Perform all disassembly and alignments procedures in STOP Position except disassembly and alignment procedures which have the special Notes.

7.3.4. Cassette Up Unit

Fig. DM3-1



Note:
The replacement Cassette Up Unit is supplied with a Lock Screw installed as shown below.
Make sure to remove this Lock Screw when replacing the Cassette Up Unit.

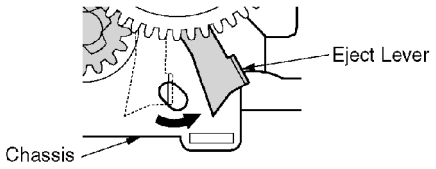
Fig. DM3-2

Reassembly Note:

1. **Installation of the Cassette Up Unit**

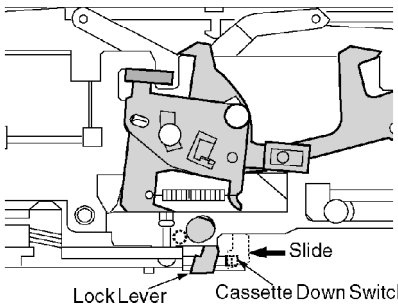
Installation is possible except when the Mechanism is in Eject Position.

(1) Before installing the Cassette Up Unit, confirm that the Eject Lever is slid as shown.



Top View

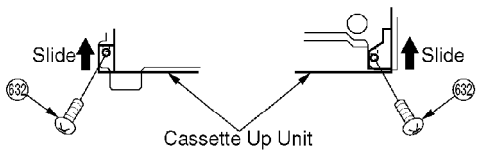
(2) Slide the Lock Lever. (Otherwise, the Lock Lever may damage the Cassette Down Switch when installing the Cassette Up Unit.)



View A

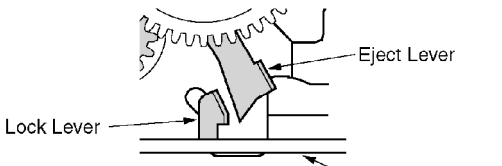
(3) Then, Install the Cassette Up Unit while setting 2 Locking Tabs (L-1). Next, insert Pin into Hole on the Chassis.

(4) Slide the Cassette Up Unit as far as possible as indicated by the arrow. Then, tighten 2 Screws (632).



Top View

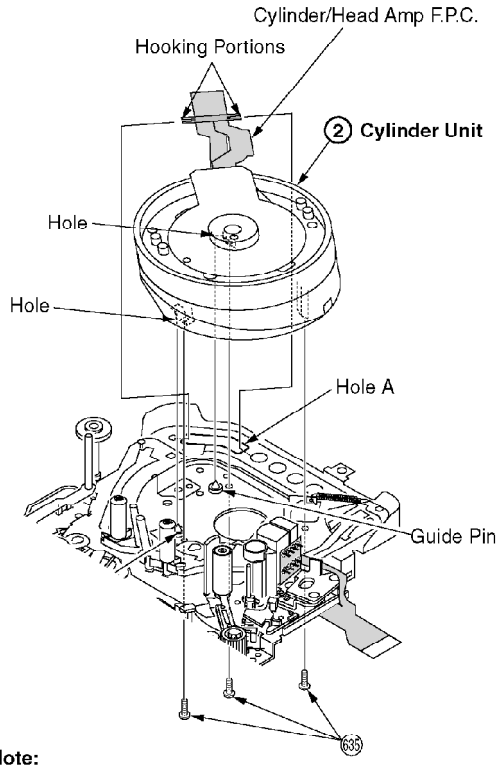
(5) After installing the Cassette Up Unit, confirm that the Lock Lever is on the left of the Eject Lever as shown.



Top View

7.3.5. Cylinder Unit

Fig. DM4-1-1



Note:

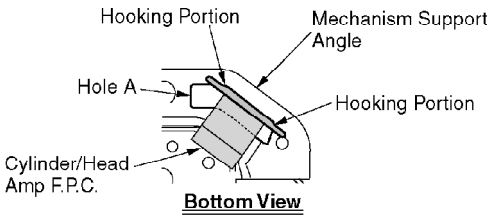
1. Use extreme care when removing the Cylinder Unit. Do not touch the Video Heads during servicing.
2. **Removal of the Cylinder Unit**

(1) Unhook the Cylinder/Head Amp F.P.C. while lifting up the Cylinder Unit slightly and remove it from the Hole A.

Reassembly Note:

1. Use extreme care when replacing the Cylinder Unit. Do not touch the Video Heads during servicing.
2. **Installation of the Cylinder Unit**

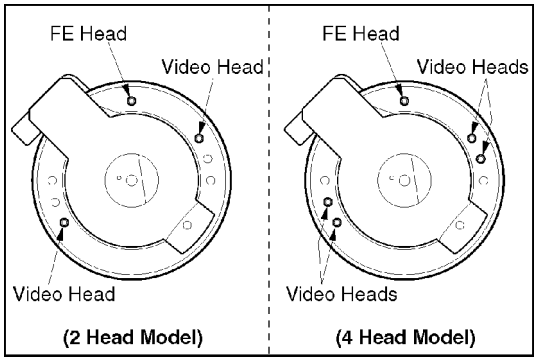
(1) Insert the Cylinder/Head Amp F.P.C. to Hole A first.
(2) Install the Cylinder Unit so that 2 Holes on the Lower Cylinder Unit surface fit over the 2 Guide Pins on the Chassis. Then, tighten 3 Screws (635).
(3) Hook the Cylinder/Head Amp F.P.C. as shown.



3. **Adjustment of the Cylinder Unit**

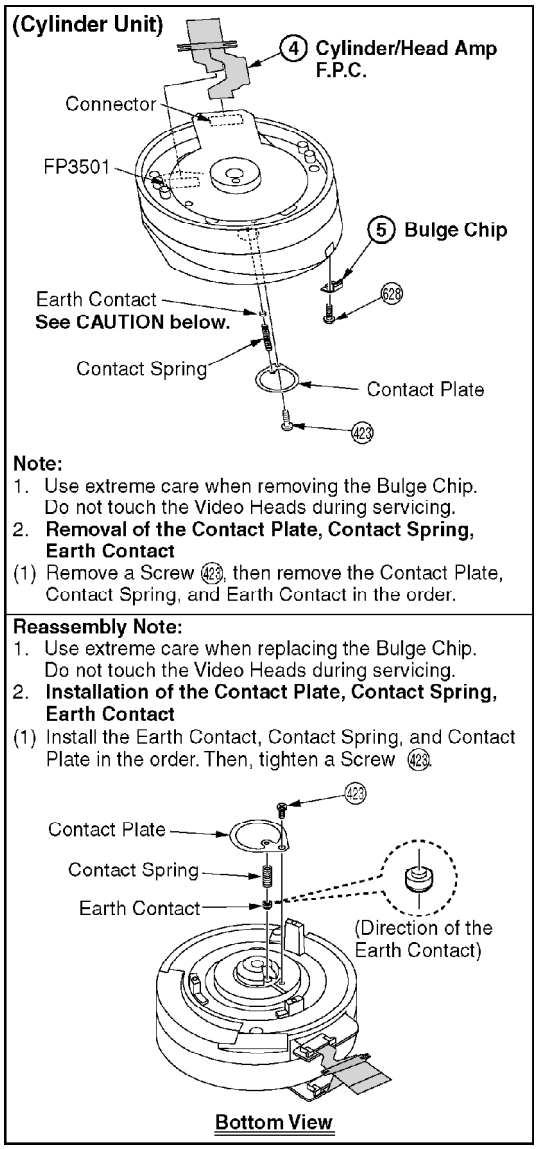
(1) After replacing, perform the "Tape Interchangeability Adjustment" procedures.

Fig. DM4-1-2



7.3.6. Cylinder/Head Amp F.P.C., Bugle Chip

Fig. DM4-2



Note:

1. Use extreme care when removing the Bulge Chip. Do not touch the Video Heads during servicing.
2. **Removal of the Contact Plate, Contact Spring, Earth Contact**

(1) Remove a Screw (423), then remove the Contact Plate, Contact Spring, and Earth Contact in the order.

Reassembly Note:

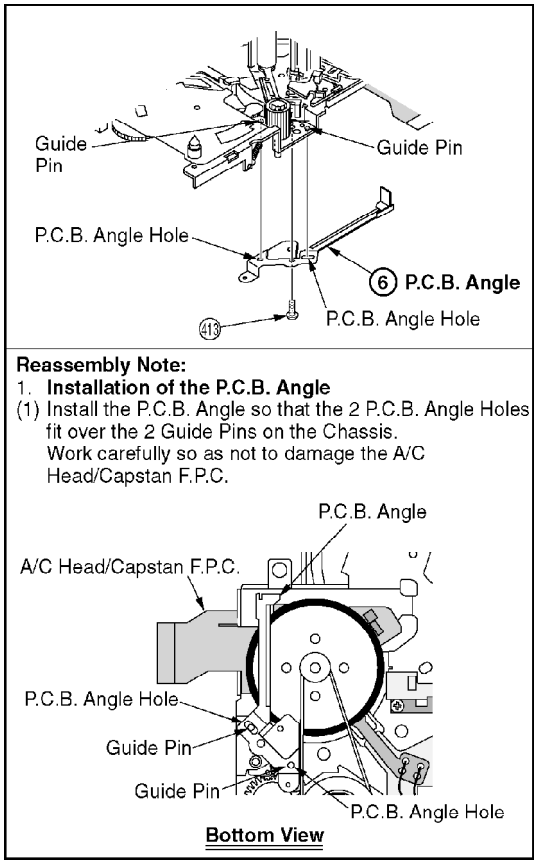
1. Use extreme care when replacing the Bulge Chip. Do not touch the Video Heads during servicing.
2. **Installation of the Contact Plate, Contact Spring, Earth Contact**

(1) Install the Earth Contact, Contact Spring, and Contact Plate in the order. Then, tighten a Screw (423).

Bottom View

7.3.7. P.C.B. Angle

Fig. DM5


Guide Pin
Guide Pin
P.C.B. Angle Hole
6 P.C.B. Angle
P.C.B. Angle Hole
Reassembly Note:
1. Installation of the P.C.B. Angle
(1) Install the P.C.B. Angle so that the 2 P.C.B. Angle Holes fit over the 2 Guide Pins on the Chassis.
Work carefully so as not to damage the A/C Head/Capstan F.P.C.
P.C.B. Angle
A/C Head/Capstan F.P.C.
P.C.B. Angle Hole
Guide Pin
Guide Pin
P.C.B. Angle Hole
Bottom View

7.3.8. Mechanism F.P.C Unit

Fig. DM6-1

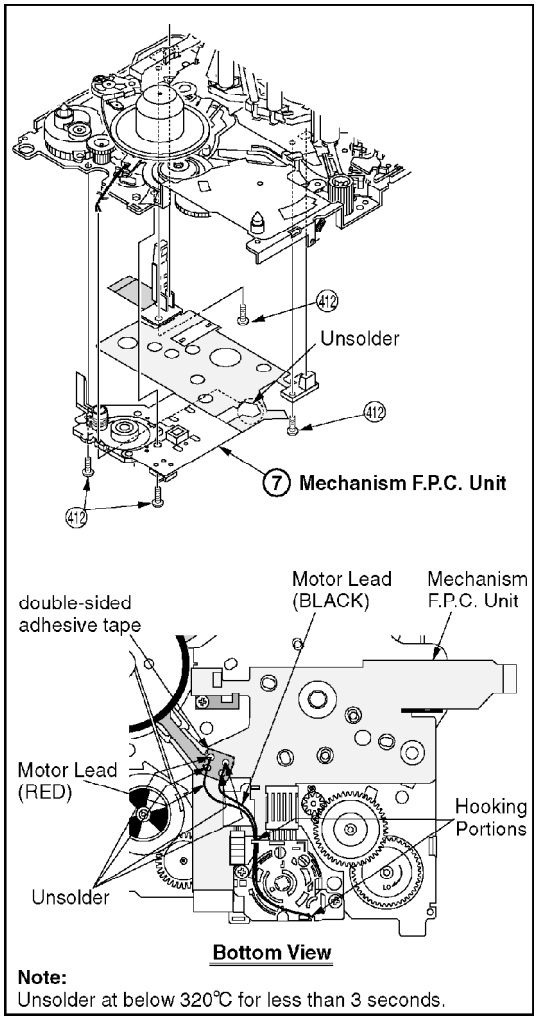
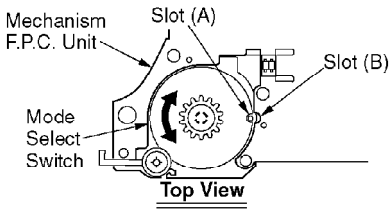

412
Unsolder
412
412
⑦ Mechanism F.P.C. Unit
Motor Lead
(BLACK)
Mechanism
F.P.C. Unit
double-sided
adhesive tape
Motor Lead
(RED)
Hooking
Portions
Unsolder
Bottom View
Note:
Unsolder at below 320℃ for less than 3 seconds.

Fig. DM6-2

Reassembly Note:

1. **Gear Alignment**
   - **The Mode Select Switch and the Main Cam Unit**

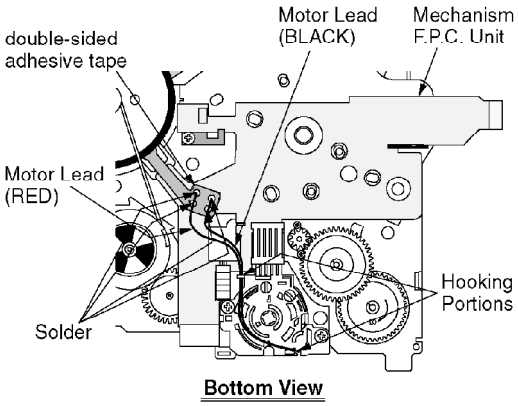
(1) Place the Mechanism in the **STOP Position** by rotating the Gear of Reduction Gear Unit.
(2) Before installing the Mechanism F.P.C. Unit, rotate the Mode Select Switch of Mechanism F.P.C. Unit so that Slot (A) is aligned with Slot (B).



Top View

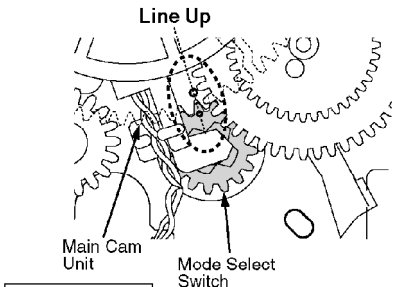
2. **Installation of the Mechanism F.P.C. Unit**

(1) Install the Mechanism F.P.C. Unit to the bottom of the Chassis. Then, tighten 4 Screws (412).
(2) Solder the Motor Leads as shown.
Note: Solder at below 320 °C for less than 3 seconds.
(3) Hook the Motor Leads and the tube to Hooking Portions together.
(4) Confirm that the Motor Leads are set correctly on the Mechanism F.P.C. Unit as shown.



Bottom View

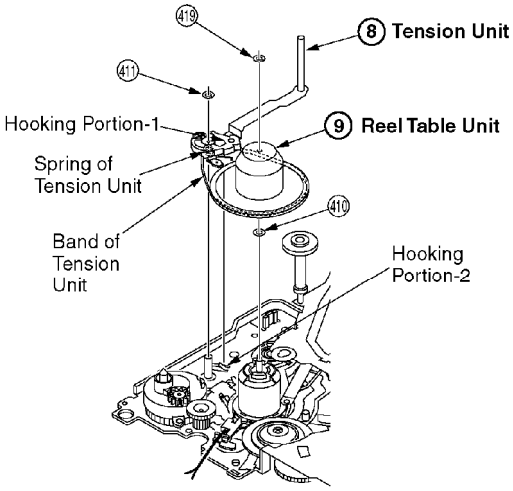
(7) Confirm that the Mode Select Switch is in STOP Position from the Top side.



Top View

7.3.9. Tension Unit, Reel Table Unit

Fig. DM7-1



1. **Removal of the Tension Unit and the Reel Table Unit**

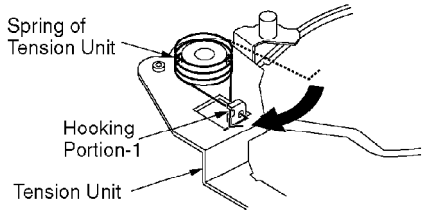
(1) Place the Mechanism in the **Fully-loaded Position**.
(2) Remove Cut Washers (411) and (419).
(3) Then, remove both the Tension Unit and the Reel Table Unit.

Fig. DM7-2

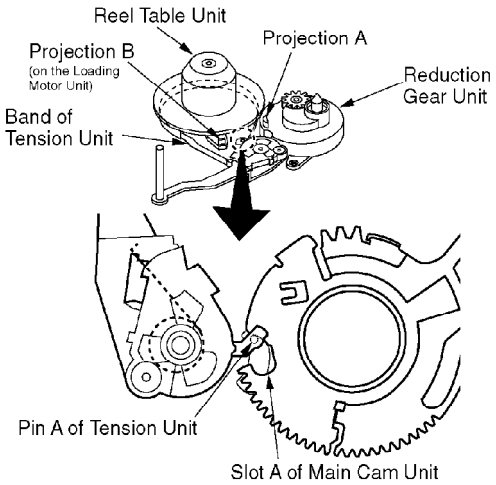
Reassembly Note:

1. **Installation of the Reel Table Unit and the Tension Unit**

(1) Before installing the Reel Table Unit and the Tension Unit, place the Mechanism in the **Fully-loaded Position** by rotating the Gear of Reduction Gear Unit.
(2) Install a Washer (410) onto the Loading Motor Unit first.
(3) Hook the Spring of Tension Unit to the Tension Unit as shown.



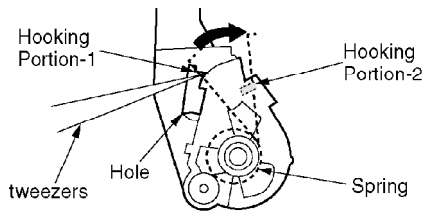
(4) Hook the Band of Tension Unit to the groove of Reel Table Unit.
(5) Install both the Reel Table Unit and Tension Unit to the Chassis so that the Pin A of Tension Unit is set into Slot A of the Main Cam Unit. Confirm that the Band of Tension Unit keeps off Projection A and B.



Fully-loaded (Play) Position

Top View

(5) Unhook the Spring of Tension Unit from Hooking Portion-1 with tweezers etc. inserted through Hole to let it hook to Hooking Portion-2 on the chassis.

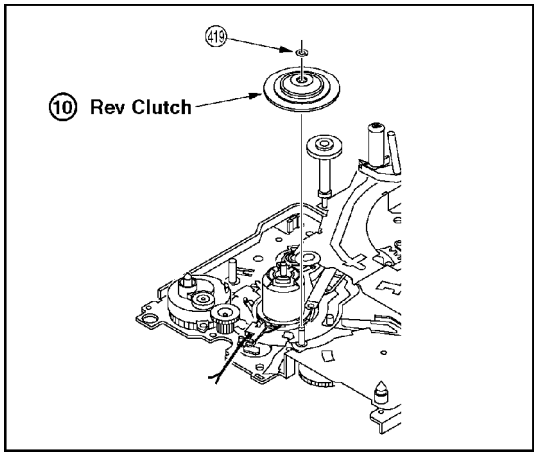


Top View

(6) Install Cut Washers (419), and (411).

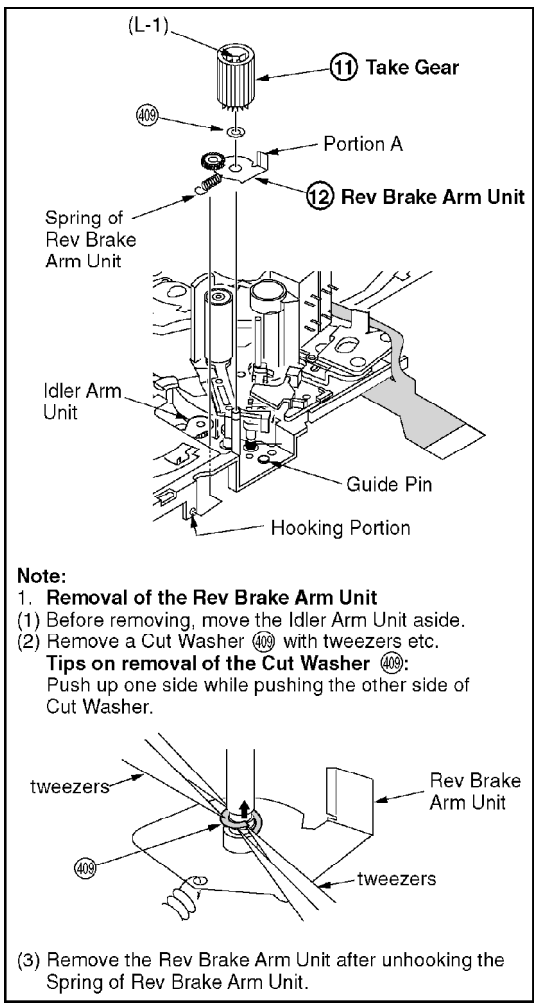
7.3.10. Rev Clutch

Fig. DM8



7.3.11. Take Gear, Rev Brake Arm Unit

Fig. DM9-1



Note:

1. **Removal of the Rev Brake Arm Unit**

(1) Before removing, move the Idler Arm Unit aside.

(2) Remove a Cut Washer (409) with tweezers etc.
Tips on removal of the Cut Washer (409):
Push up one side while pushing the other side of Cut Washer.

(3) Remove the Rev Brake Arm Unit after unhooking the Spring of Rev Brake Arm Unit.

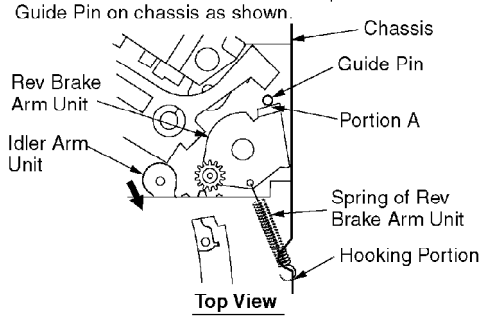
Fig. DM9-2

Reassembly Note:

1. **Installation of the Rev Brake Arm Unit**

(1) Before installing the Rev Brake Arm Unit, move the Idler Arm Unit aside as indicated by the arrow.

(2) Hook the Spring of Rev Brake Arm Unit to the Hooking Portion. After hooking the Spring, confirm that Portion A of the Rev Brake Arm Unit does not pass over the Guide Pin on chassis as shown.

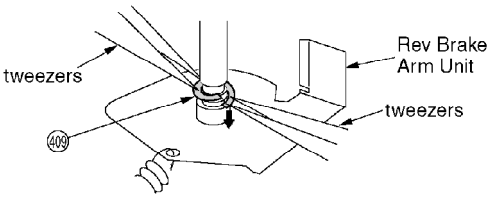


Top View

(3) Install a Cut Washer (409) with tweezers.

Tips on installation of the Cut Washer (409):

Push down one side while pushing the other side of Cut Washer.



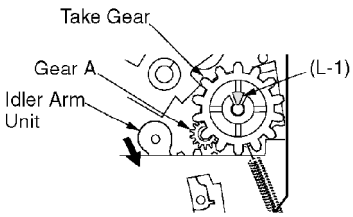
(4) After installing, confirm that a Cut Washer (409) can be rotated.

2. **Installation of the Take Gear**

(1) Before installing the Take Gear, move the Idler Arm Unit aside as indicated by the arrow.

(2) Install the Take Gear while rotating so it engages with Gear A so as not to cause damage.
Then, confirm that Locking Tab (L-1) is set.

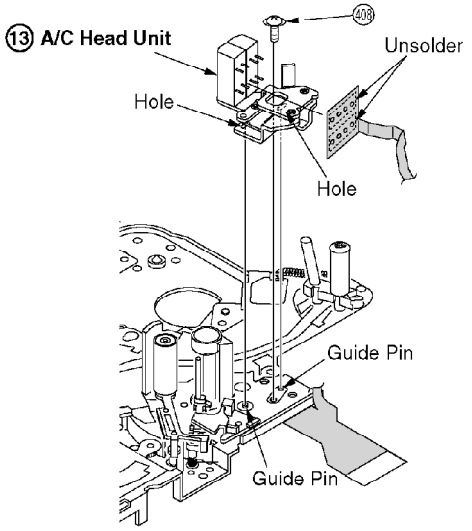
Note: Use extreme care when installing the Take Gear. If Locking Tab (L-1) is broken, install a new Take Gear.



Top View

7.3.12. A/C Head Unit

Fig. DM10

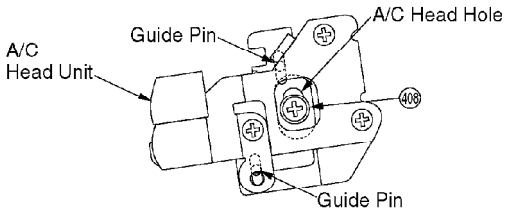


Note:
Unsolder at below 320 °C for less than 3 seconds.

Reassembly Note:

1. **Installation of the A/C Head Unit**

(1) Install A/C Head Unit so that 2 Guide Pins are in holes on the A/C Head Unit.
(2) Tighten a Screw (408) (1.0 ~ 1.3 kgf•cm) in the approximate center of the hole.



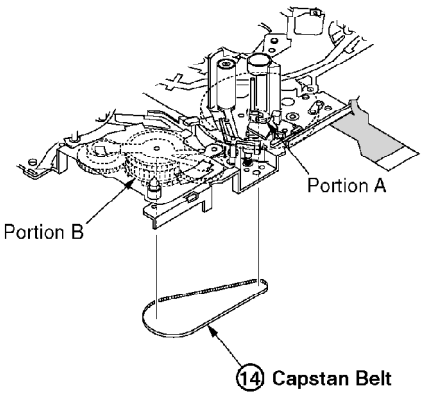
Top View

2. **Adjustment of the A/C Head Unit**

(1) After replacing, perform the "Tape Interchangeability Adjustment" procedures.

7.3.13. Capstan Belt

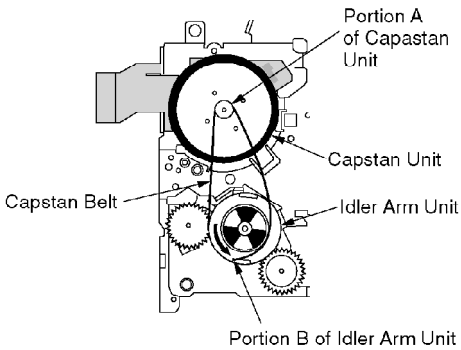
Fig. DM11



Reassembly Note:

1. **Tips on Installation of the Capstan Belt**

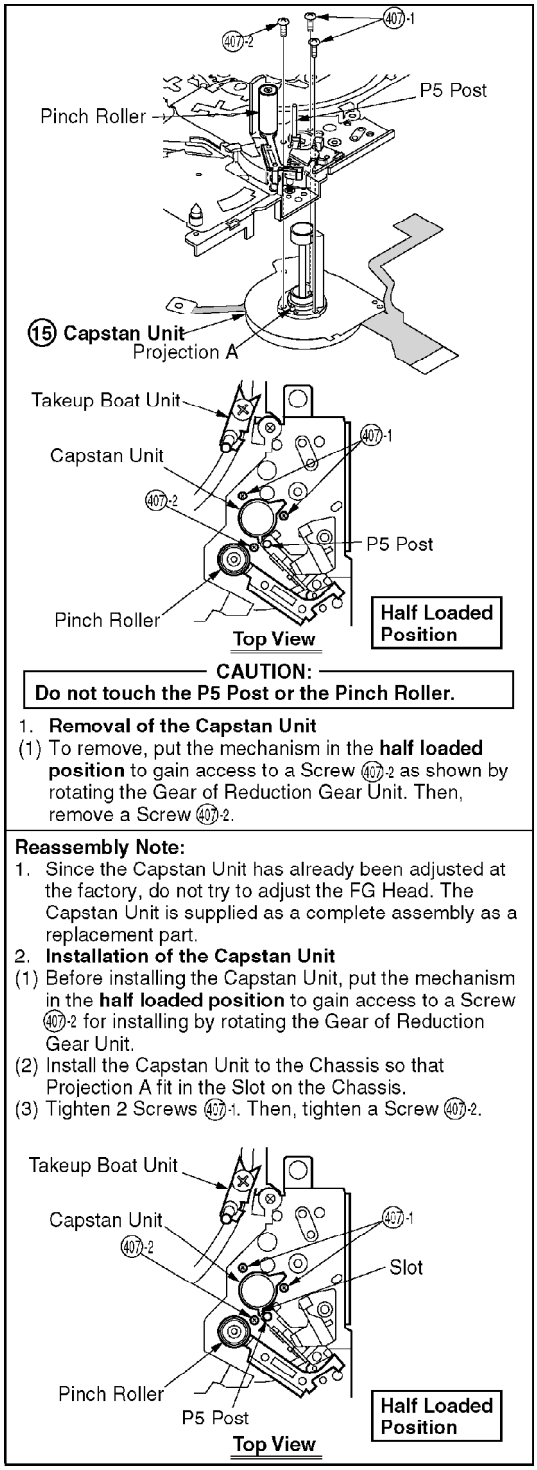
(1) Hook the Capstan Belt to Portion A of Capstan Unit at first as shown.
(2) Hook the Capstan Belt to Portion B of Idler Arm Unit.
(3) Rotate the Idler Arm Unit as indicated by the arrow (counterclockwise) and set it completely.



Bottom View

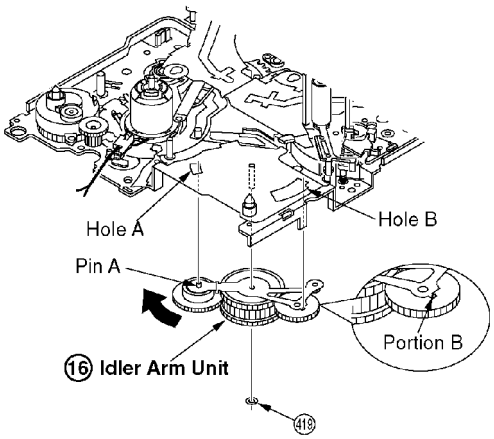
7.3.14. Capstan Unit

Fig. DM12


407-1
407-2
P5 Post
Pinch Roller
15 Capstan Unit
Projection A
Takeup Boat Unit
Capstan Unit
407-1
407-2
P5 Post
Pinch Roller
Top View
Half Loaded Position
CAUTION:
Do not touch the P5 Post or the Pinch Roller.
1. Removal of the Capstan Unit
(1) To remove, put the mechanism in the half loaded position to gain access to a Screw 407-2 as shown by rotating the Gear of Reduction Gear Unit. Then, remove a Screw 407-2.
Reassembly Note:
1. Since the Capstan Unit has already been adjusted at the factory, do not try to adjust the FG Head. The Capstan Unit is supplied as a complete assembly as a replacement part.
2. Installation of the Capstan Unit
(1) Before installing the Capstan Unit, put the mechanism in the half loaded position to gain access to a Screw 407-2 for installing by rotating the Gear of Reduction Gear Unit.
(2) Install the Capstan Unit to the Chassis so that Projection A fit in the Slot on the Chassis.
(3) Tighten 2 Screws 407-1. Then, tighten a Screw 407-2.
Takeup Boat Unit
Capstan Unit
407-1
407-2
Slot
Pinch Roller
P5 Post
Top View
Half Loaded Position

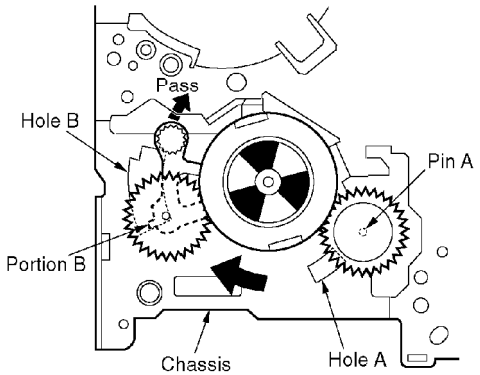
7.3.15. Idle Arm Unit

Fig. DM13



1. **Removal of the Idler Arm Unit**
(1) To remove the Idler Arm Unit, pull the Idler Arm Unit slightly from the Chassis to release Pin A from Hole A. Then, remove the Idler Arm Unit while turning as indicated by the arrow.

Reassembly Note:
1. **Installation of the Idler Arm Unit**
(1) Set the Idler Arm Unit so that Portion B is in Hole B as shown.
(2) Turn the Idler Arm Unit slightly as indicated by arrow to set Pin A in Hole A.

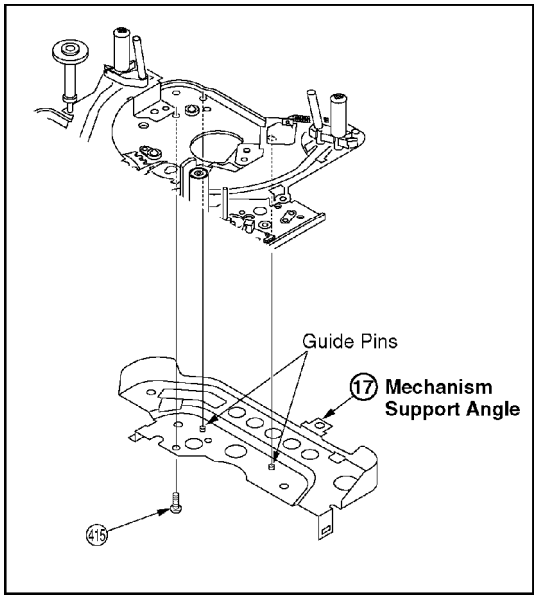


Bottom View

(3) Install a Cut Washer 419.

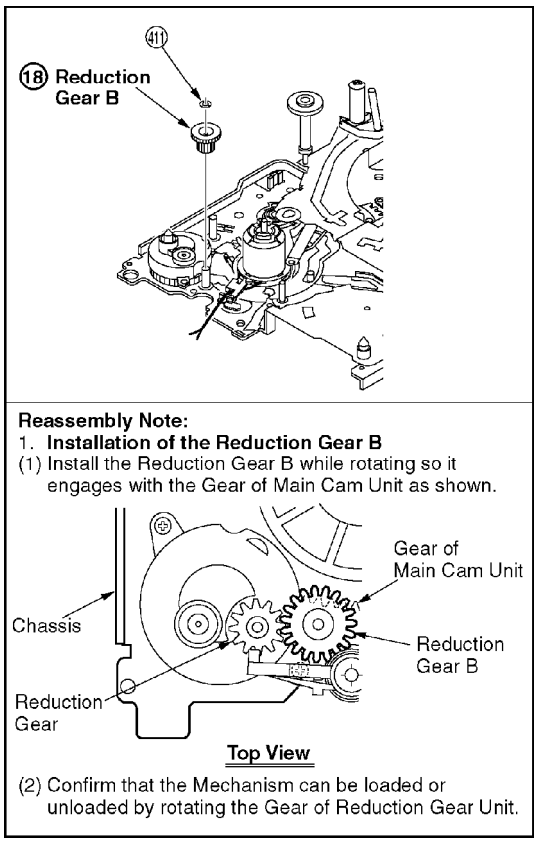
7.3.16. Mechanism Support Angle

Fig. DM14



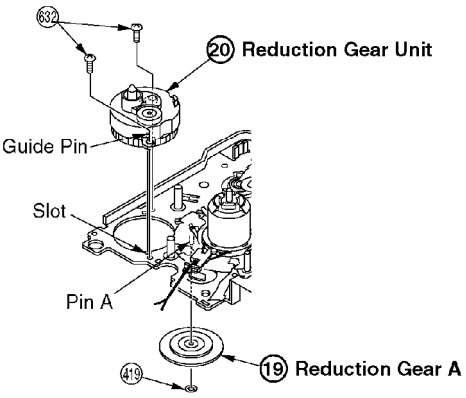
7.3.17. Reduction Gear B

Fig. DM15

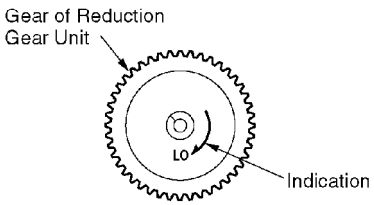

411
18 Reduction Gear B
Reassembly Note:
1. Installation of the Reduction Gear B
(1) Install the Reduction Gear B while rotating so it engages with the Gear of Main Cam Unit as shown.
Gear of Main Cam Unit
Chassis
Reduction Gear B
Reduction Gear
Top View
(2) Confirm that the Mechanism can be loaded or unloaded by rotating the Gear of Reduction Gear Unit.

7.3.18. Reduction Gear A, Reduction Gear Unit

Fig. DM16



Indication on Gear of Reduction Gear Unit
The arrow indicated on the Gear of Reduction Gear Unit shows the direction to load.



Bottom View

Reassembly Note:
1. **Installation of the Reduction Gear Unit**
(1) Install the Reduction Gear Unit so that Guide Pin fits in the Slot on the Chassis.
Then, tighten 2 Screws (632).

7.3.19. Pinch Arm Unit, Opener, P5 Arm Unit

Fig. DM17-1

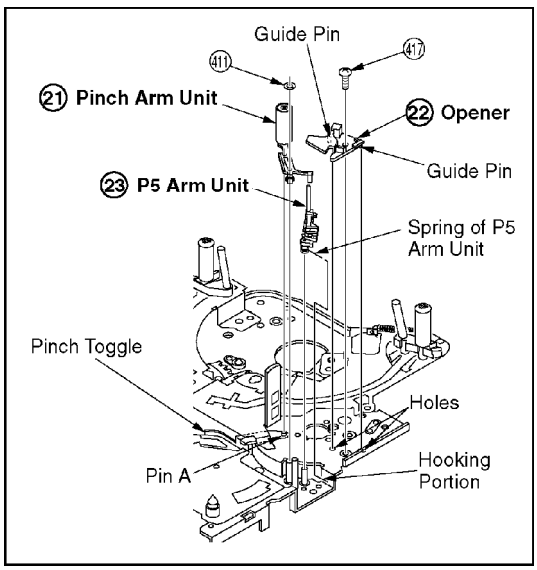
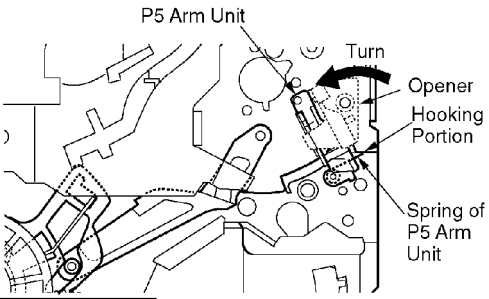


Fig. DM17-2

Reassembly Note:

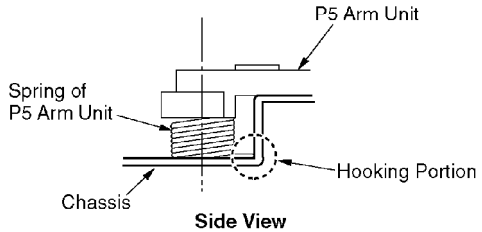
1. **Installation of the P5 Arm Unit and the Opener**

(1) Before installing the P5 Arm Unit, put the Mechanism in the **Loading Position** (S and T Posts are located at the end of guide slots) to make installing the Pinch Arm Unit easier. (See 2. **Installation of the Pinch Arm Unit**.)
(2) Install the P5 Arm Unit while hooking the Spring to Hooking Portion.
(3) Turn the P5 Arm Unit as indicated by the arrow while lifting up the P5 Arm Unit slightly from the Chassis.



Loading Position **Top View**

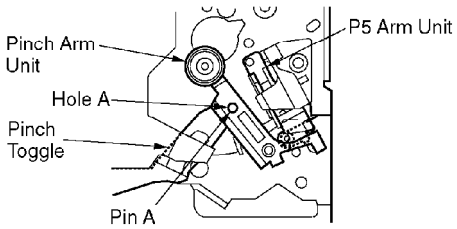
(4) Install the Opener so that Guide Pins on the Opener fit in Holes on the Chassis. Then, tighten a Screw (417).
(5) Confirm that the P5 Arm Spring is hooked on the bottom of chassis.



Side View

2. **Installation of the Pinch Arm Unit**

(1) Install the Pinch Arm Unit.
(2) Fit Hole A on the Pinch Arm Unit over Pin A on the Pinch Toggle as shown.



Top View

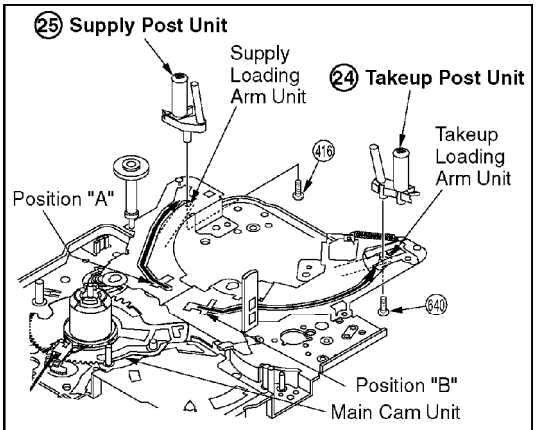
(3) Install the a Cut Washer (411).

3. **Adjustment of the P5 Arm Unit and the Pinch Arm Unit**

(1) After replacing, perform the "Tape Interchangeability Adjustment" procedures.

7.3.20. Takeup Post Unit, Supply Post Unit

Fig. DM18-1



Note:

1. **Removal of the Supply Post Unit and the Takeup Post Unit**

(1) Load the Mechanism to the **Loading Position** to gain access to a Screw (640) and (416) for removal by rotating the Main Cam Unit.
(2) Then, remove a Screw (640) and (416).
(3) Put the arm of the Supply Loading Arm Unit and the Takeup Loading Unit aside.
(4) Slide back the Supply Post Unit and the Takeup Post Unit to Position "A" and "B" and remove.

Fig. DM18-2

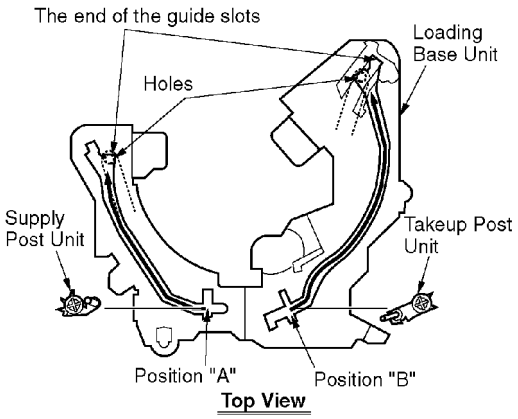
Reassembly Note:

1. **Installation of the Supply Post Unit and the Takeup Post Unit**

(1) Confirm that the end of the arm (the threaded hole) of Supply Loading Arm Unit and the end of the arm (the threaded hole) of Takeup Loading Arm Unit are in the end of the guide slots.

(2) Install the Supply Post Unit and the Takeup Post Unit into Position "A" and "B" while being careful of the direction of the Supply Post Unit and the Takeup Post Unit.

(3) Slide the Supply Post Unit and the Takeup Post Unit to the end of guide slots as shown.



Top View

(4) Align the Hole of the Supply Loading Arm Unit with the Threaded Hole of the Supply Post Unit. Do the Same with the Takeup Post Unit.

(5) Tighten a Screw (640) and (416).

Caution:

Be careful of the following when tightening a Screw (640) and (416).

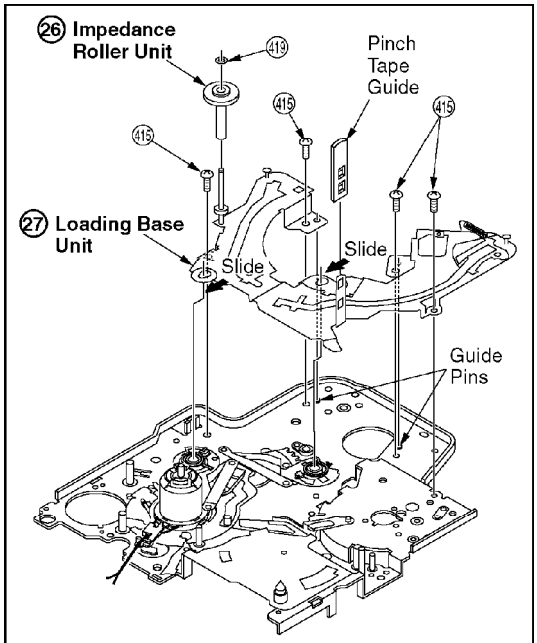
1. Be sure to tighten screws straight.
2. Do not over tighten screws.

2. **Adjustment of the Supply Boat Unit and Takeup Boat Unit**

(1) After replacing, perform the "Tape Interchangeability Adjustment" procedures.

7.3.21. Impedance Roller Unit, Loading Base Unit

Fig. DM19-1



Note:

1. Do not apply excessive pressure to the Impedance Roller Unit.
2. **Removal of the Loading Base Unit**
   Do not apply excessive pressure to the Loading Base Unit so as not to bend.

(1) When removing the Loading Base Unit, remove 4 Screws (415).
(2) Release 2 Guide Pins while lifting up the Loading Base Unit slightly. Then, remove the Loading Base Unit after sliding as indicated by the arrow.

Fig. DM19-2

Reassembly Note:

1. **Installation of the Loading Base Unit**

(1) Before installing the Loading Base Unit, rotate the Main Cam Unit clockwise (to change the gear position from STOP position (Fig. DM20) to Standby position (Fig. DM19-2)) so that Holes A, B, C, and D are Through Holes with holes on the chassis.

(2) Confirm that Portion (a) of Supply Loading Arm Unit and (b) of Takeup Loading Arm Unit are in the position keeping off Thread Holes for 4 Screws (415) as shown. Because the Threaded Holes of the S and T Post are aligned with Hole of the S and T Loading Arm Unit.

(3) Install the Loading Base Unit while sliding.

(4) Tighten 4 Screws (415).

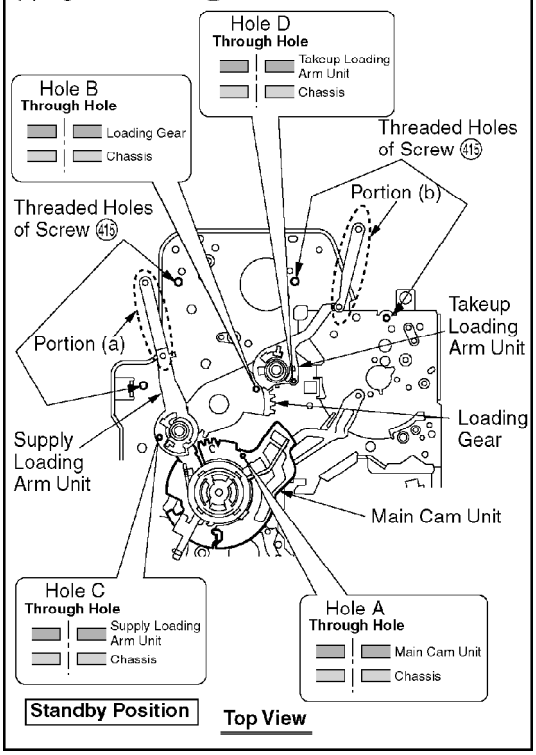
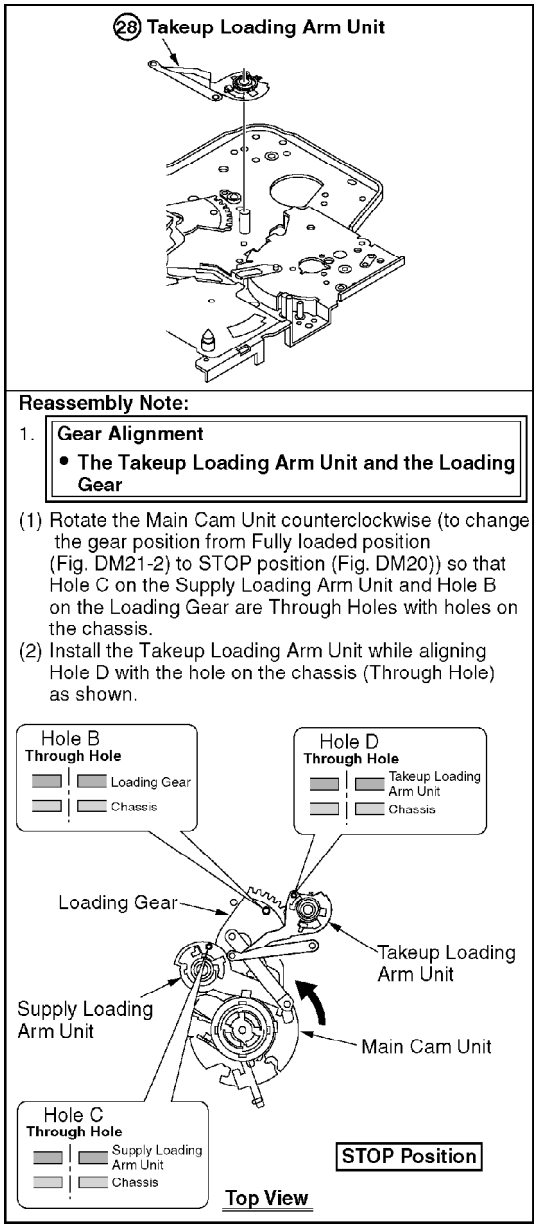


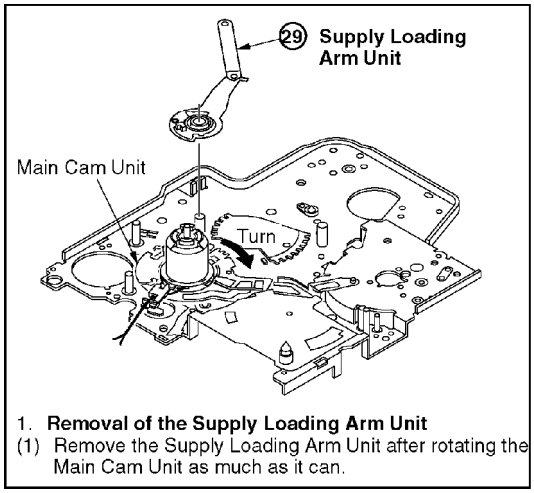
Fig. DM20

7.3.22. Takeup Loading Arm Unit


28 Takeup Loading Arm Unit
Reassembly Note:
1.
Gear Alignment
• The Takeup Loading Arm Unit and the Loading Gear
(1) Rotate the Main Cam Unit counterclockwise (to change the gear position from Fully loaded position (Fig. DM21-2) to STOP position (Fig. DM20)) so that Hole C on the Supply Loading Arm Unit and Hole B on the Loading Gear are Through Holes with holes on the chassis.
(2) Install the Takeup Loading Arm Unit while aligning Hole D with the hole on the chassis (Through Hole) as shown.
Hole B
Through Hole
Loading Gear
Chassis
Hole D
Through Hole
Takeup Loading Arm Unit
Chassis
Loading Gear
Takeup Loading Arm Unit
Supply Loading Arm Unit
Main Cam Unit
Hole C
Through Hole
Supply Loading Arm Unit
Chassis
STOP Position
Top View

7.3.23. Supply Loading Arm Unit

Fig. DM21-1



1. **Removal of the Supply Loading Arm Unit**
(1) Remove the Supply Loading Arm Unit after rotating the Main Cam Unit as much as it can.

Fig. DM21-2

Reassembly Note:

1. **Gear Alignments**
   - **The Supply Loading Arm Unit and the Loading Gear**
   - **The Supply Loading Arm Unit and the Main Cam Unit**

(1) Confirm that Hole A on the Main Cam Unit is a Through Hole with a hole on the chassis by rotating the Main Cam Unit clockwise as much as possible. Also, make sure the Loading Gear makes contact with contact point.
(2) Set the Supply Loading Arm Unit so that the last tooth of its lower gear is just outside the last tooth of the Loading Gear as shown.
(3) Turn the Main Cam Unit counterclockwise first ①, then turn Supply Loading Arm Unit clockwise slightly ② so that the last tooth on upper gear of Supply Loading Arm Unit is just outside tooth (a) of Main Cam Unit.

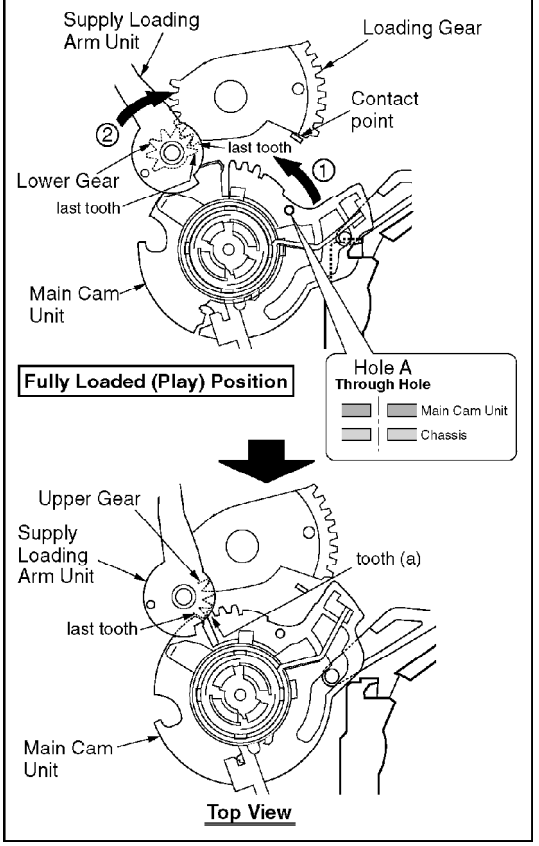
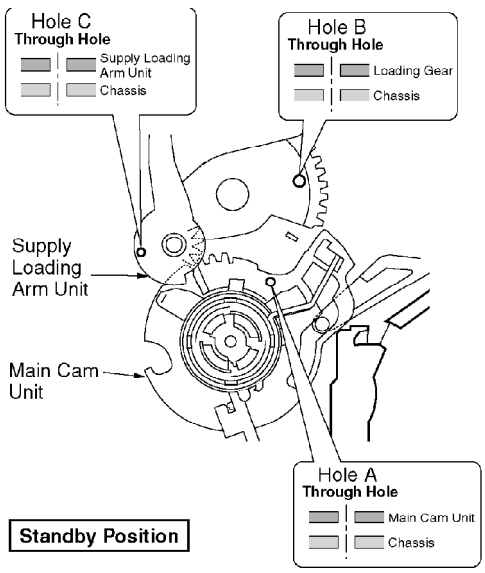


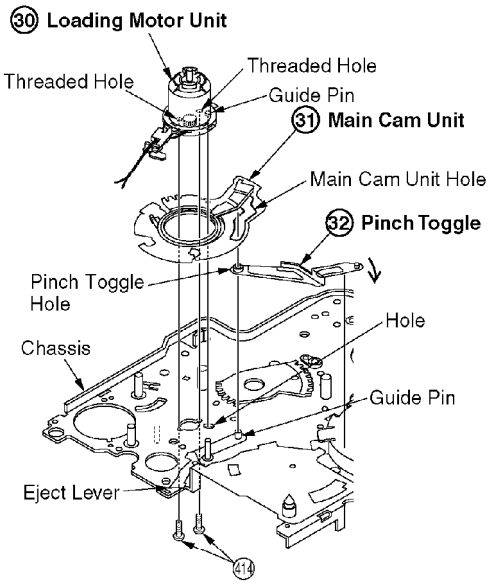
Fig. DM21-3

(4) Confirm that Hole A, B, and C are Through Holes by rotating the Main Cam Unit.



7.3.24. Loading Motor Unit, Main Cam Unit, Pinch Toggle

Fig. DM22



Reassembly Note:

1. Do not pull the Eject Lever upward so as not to bend it.
2. **Installation of the Pinch Toggle and the Main Cam Unit**

(1) Install the Pinch Toggle so that the Pinch Toggle Hole fit over the Guide Pin.
(2) Install the Main Cam Unit so that Guide Pin fits in the Main Cam Unit Hole.

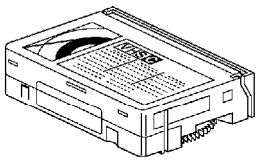
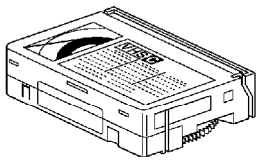
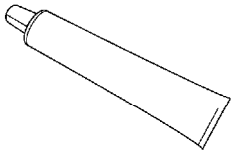
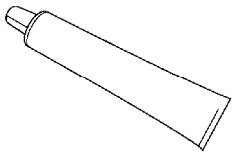
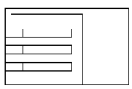
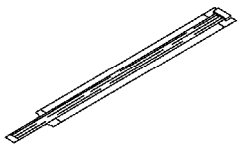
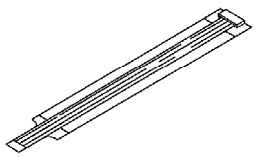
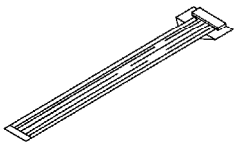
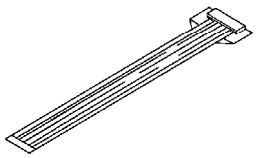
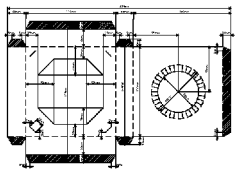
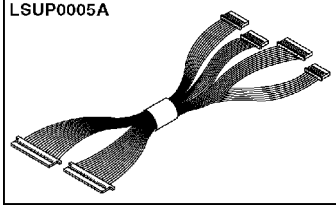
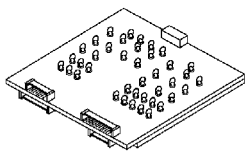
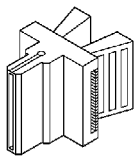
3. **Installation of the Loading Motor Unit**

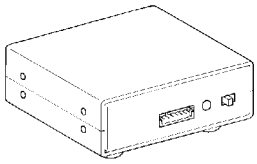
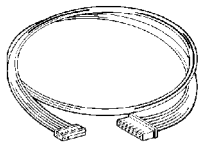
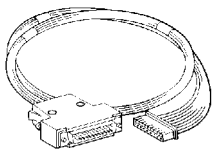
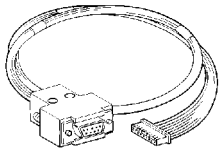
(1) Install the Loading Motor Unit the Guide Pin fits in Hole on chassis.
(2) Tighten 2 Screws (414). If the 2 Screws (414) can not reach Threaded Holes, push down on the upper side of the Loading Motor Unit to tighten 2 Screws (414).

7.4. SCREWS FOR DISASSEMBLY/ASSEMBLY OF MECHANISM

8. ADJUSTMENT PROCEDURES

8.1. SERVICE FIXTURES & TOOLS

VHS-C Alignment Tape VFMS0004H6C 	VHS-C Alignment Tape VFMW0001C 	Molytone Grease VFK1024 
Grease LSUQ0002 	Grease VFKS0081	Lock Screw VHDW0125
Head Cleaning Stick VFK27 	Extension Cable 12P VUVS0007 	Extension Cable 20P LSUA0020 
Extension Cable 22P VUVS0012 	Extension Cable 28P VUVS0015 	A.W.B. Adjustment Fixture VFKW0066 
TP Board TP Adjustment Cable 40P LSUP0005A 	TP Adjustment P.C.B. 40P VFKW0123B 	TP Clip 36P LSUP0005C 

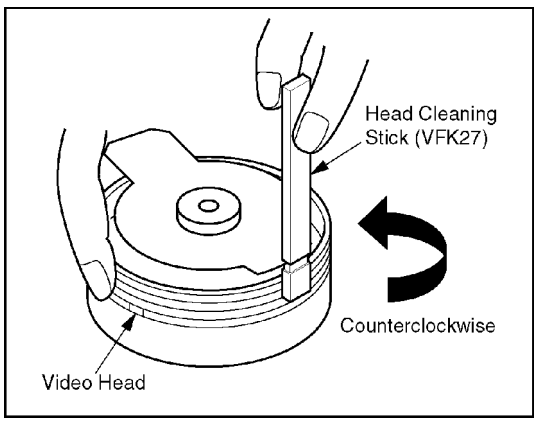
CAAS Kit	VFKW1000
Interface Box VFKW1000A	
Camera Connecting Cable VFKW1000B	
25pin RS-232C Cable VFKW1000D	
9pin RS-232C Cable VFKW1000C	

8.2. MECHANICAL ADJUSTMENT

8.2.1. CLEANING PROCEDURE FOR THE UPPER CYLINDER UNIT

1. While slowly turning the Upper Cylinder Unit counterclockwise by hand, gently rub the Video Heads with a Head Cleaning Stick (VFK27) moistened with Isopropyl Alcohol 91 %.

Fig. M1



Note:

A. Do not rub vertically or apply excess pressure to the Video Heads.
Do not turn the Upper Cylinder Unit clockwise while cleaning.

B. After cleaning, use a Dry Head Cleaning Stick (VFK27) to remove any Isopropyl Alcohol 91 % remaining on the cylinder tape path. Otherwise, tape damage will occur.

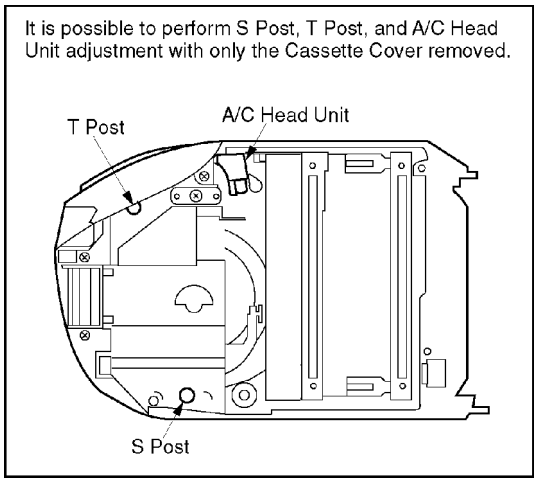
8.2.2. ADJUSTMENT PROCEDURES

8.2.2.1. TAPE INTERCHANGEABILITY ADJUSTMENT

Before perform these Adjustment/Confirmation procedures, be sure to complete following items.

1. Connect the TP Board to S301 on the camcorder. Refer to "HOW TO USE TP BOARD" in "SERVICE NOTES."

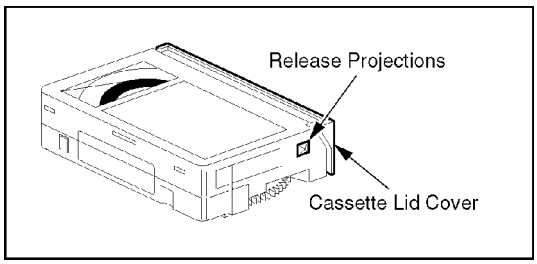
Fig. M2-1


It is possible to perform S Post, T Post, and A/C Head Unit adjustment with only the Cassette Cover removed.
T Post
A/C Head Unit
S Post

2. Put the unit into the service mode "I. TRACKING FIX" to defeat Auto Tracking. Refer to "SERVICE MODE SPECIFICATION (SELF-DIAGNOSTIC SYSTEM) " in "SERVICE NOTES."

3. Remove the Cassette Lid Cover from the Cassette Tape or the Alignment Tape.

Fig. M2-2



Equipment Required:

Dual Trace Oscilloscope
VHS-C Alignment Tape (VFMS0004H6C)
VHS-C Alignment Tape (VFMW0001C)
Screwdriver Set (Purchase Locally)
TP Board
TP Adjustment Cable 40P (LSUP0005A)
TP Adjustment P.C.B. 40P (VFKW0123B)
TP Clip 36P (LSUP0005C)

8.2.2.1.1. ENVELOPE OUTPUT ADJUSTMENT

The height of the S and T Posts replacement part is preset at the factory.

Purpose:

To achieve a satisfactory picture and secure precise tracking.

Symptom of Misadjustment:

If the envelope is output poorly, much noise will appear in the picture. Then the tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control circuit.

1. **Put the unit into the service mode "I. Tracking Fix" to defeat Auto Tracking. Refer to "SERVICE MODE SPECIFICATION (SELF-DIAGNOSTIC SYSTEM) " in "SERVICE NOTES."**
2. **Connect the oscilloscope to Pin 30 (Envelope signal) on the TP Adjustment P.C.B. Use Pin 33 (Head Switch signal) as a trigger.**
3. **Play back the Alignment Tape (VFMS0004H6C).**
4. **Confirm that the RF envelope is flat enough. If not, with Flat Headed (—) Screwdriver, adjust S and T post height so that the envelope waveform becomes as flat as possible (No envelope drop). If the envelope drop appears on the left-half of the waveform, adjust S post height. If the envelope drop appears on the right-half of the waveform, adjust T post height.**
   CAUTION: Do not apply excessive pressure onto the S and T Posts when adjusting S and T post height.

Fig. M3-1

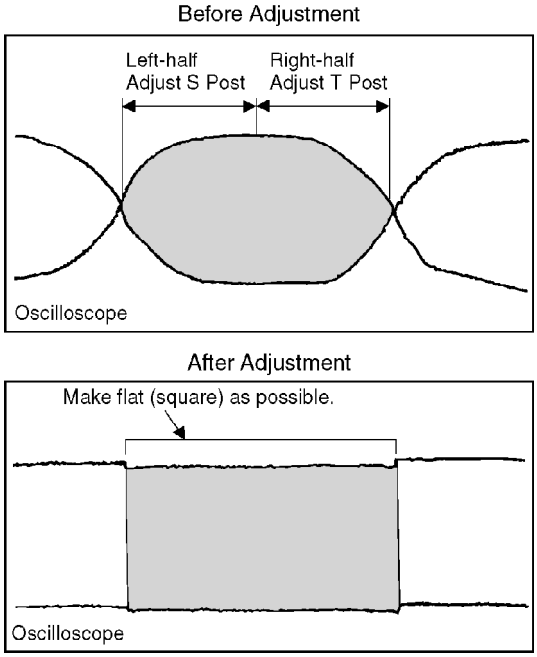
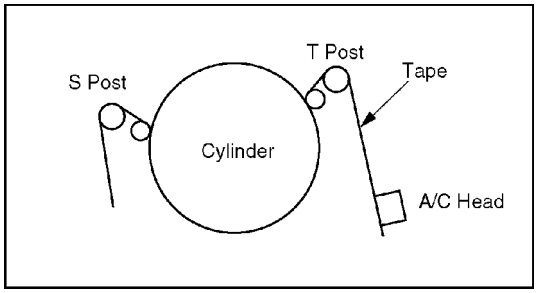


Fig. M3-2



Note:

It will be possible to confirm step 4) after performing the following steps.

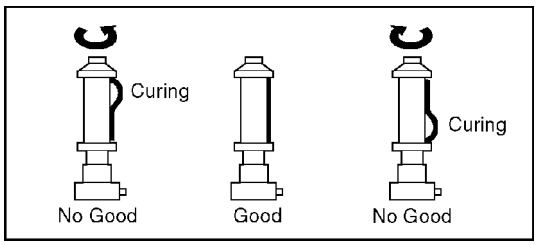
A. Exit the "I. TRACKING FIX" mode, then skip the "J. PG SHIFTER" mode to enter other modes (except these 2). Or, close the service mode.

B. Press the Tracking Control Up or Down button on the camcorder. Make sure that the envelope waveform remains flat. If not, readjust S and/or T post heights.

5. After adjustment, confirm that the tape travels without curing at S and T posts.

If curing is apparent, readjust the height of posts.

Fig. M3-3



8.2.2.1.2. A/C HEAD HEIGHT ADJUSTMENT

The height of the A/C Head replacement part is preset at the factory.

Purpose:

To be sure the tape runs properly along the Control Head.

Symptom of Misadjustment:

If the control signal is not properly picked up, Servo Operation can not be achieved.

1. Connect the oscilloscope to Pin 25 (PB Control signal) on the TP Adjustment P.C.B.

2. Play back the Alignment Tape (VFMW0001C)

3. Confirm that the Sub Control Signal is 500 mV200 mV. If not,

slightly and equally adjust Screw A, Screw B, and Screw C on the A /C Head Unit to achieve the sub control signal level of 500 mV200 mV.
(Sub Control Signal level will decrease when rotating screws clockwise, and increase when rotating screws counterclockwise.)

Fig. M4-1

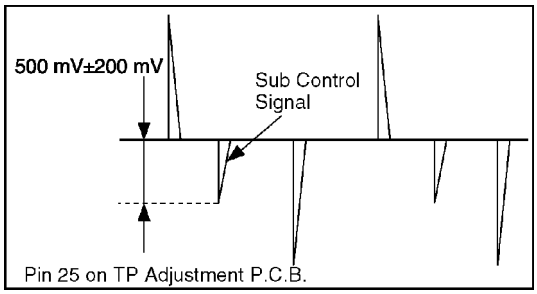
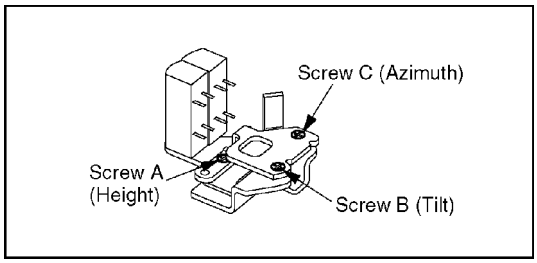


Fig. M4-2



8.2.2.1.3. A/C HEAD AZIMUTH ADJUSTMENT

Purpose:

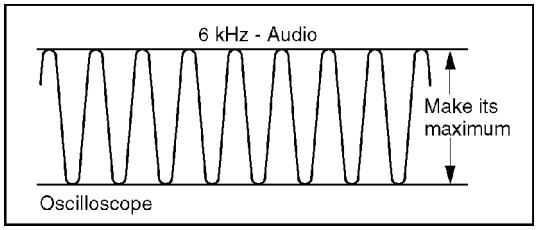
To adjust the position and height of the A/C Head so that it meets the tape tracks properly.

Symptom of Misadjustment:

If the position of the A/C Head is not properly adjusted, the Audio S /N Ratio will be poor.

1. **Connect the Audio/Video Cable on the camcorder.**
2. **Connect the oscilloscope to audio output jack.**
3. **Playback the Alignment Tape (VFMS0004H6C).**
4. **Adjust Screw C (Azimuth) on the A/C Head Unit so that the output level is at maximum.**

Fig. M5



5. Confirm and readjust the A/C Head height.
6. Confirm and readjust Screw C (Azimuth) on the A/C head so that the output audio becomes is maximum.

8.2.2.1.4. A/C HEAD HORIZONTAL POSITION ADJUSTMENT

Purpose:

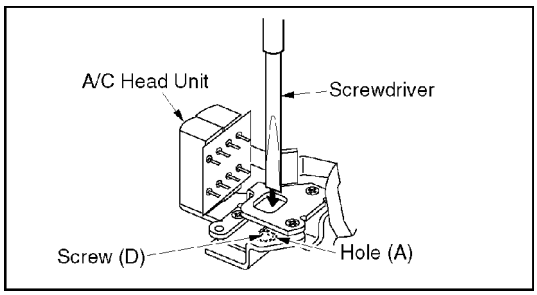
To adjust the Horizontal Position of the A/C Head.

Symptom of Misadjustment:

If the Horizontal Position of the A/C Head is not properly adjusted, maximum envelope can not be obtained at the Neutral Position of the Tracking Control Circuit.

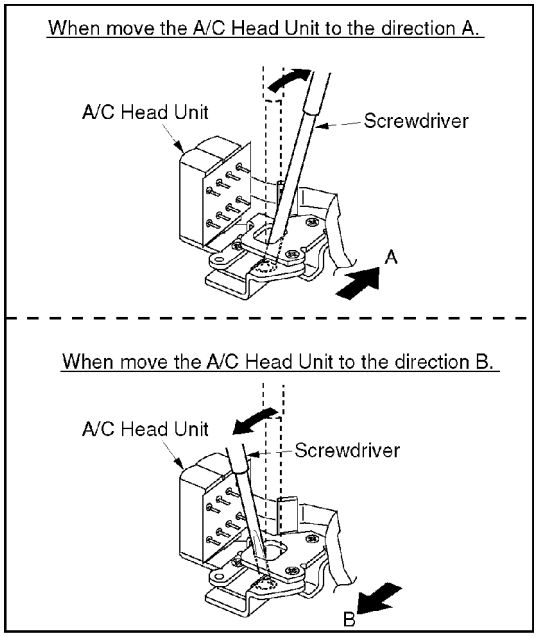
1. Put the unit into the service mode "I. TRACKING FIX" to defeat Auto Tracking. Refer to "SERVICE MODE SPECIFICATION (SELF-DIAGNOSTIC SYSTEM) " in "SERVICE NOTES."
2. Connect the oscilloscope to Pin 30 (Envelope signal) on the TP Adjustment P.C.B. Use Pin 33 (Head Switch signal) as a trigger.
3. Play back the Alignment Tape (VFMS0004H6C).
4. Set the Screwdriver into the Hole (A) as shown.

Fig. M6-1



5. Slowly move the A/C Head Unit to the direction "A" or "B" as shown so that the envelope is at maximum.

Fig. M6-2



6. To find the center of the maximum period of the envelope, move the A/C Head Unit to confirm the limits on either side of the maximum period.

Note:

It will be possible to confirm step 6) after performing the following steps.

1. Exit the "I. TRACKING FIX" mode, then skip the "J. PG SHIFTER" mode to enter other modes (except these 2). Or, close the service mode.

2. Press the Tracking Control Up Button on the camcorder several times (count the number of times pressed) until the maximum envelope is reduced to 1/2.

3. Press the Tracking Control Down Button on the camcorder several times (count the number of times pressed) until the maximum envelope is reduced to 1/2.

4. If the number of pressing is not the same, readjust A/C Head horizontal position.

8.2.2.1.5. CONFIRMATION OF ENVELOPE OUTPUT

Purpose:

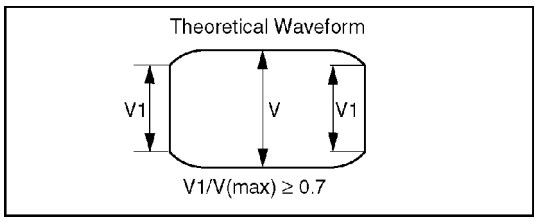
To achieve a satisfactory picture and secure precise tracking.

Symptom of Misadjustment:

If the envelope is output poorly, much noise will appear in the picture. Then the tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control circuit.

1. **Connect the oscilloscope to Pin 30 (Envelope signal) on the TP Adjustment P.C.B. Use Pin 33 (Head Switch signal) as a trigger.**
2. **Play back the Alignment Tape (VFMS0004H6C).**
3. **Confirm that the envelope waveform is as flat as possible (V1/V(max) 0.7).**
   If adjustment is required, adjust S Post and/or T Post with "—" Screwdriver. Refer to "ENVELOPE OUTPUT ADJUSTMENT."

Fig. M7



8.3. ELECTRICAL ADJUSTMENT

8.3.1. INITIAL GUIDELINE

The table below shows which adjustments are necessary according to the unit parts and individual parts to be replaced. Make sure to perform these adjustments shown below as necessary.

Adjustment Item \ Replacement Parts		MAIN C.B.A.	IC301(DIGITAL SIGNAL PROCESSOR)	IC306(EEPROM)	IC309(HALL AMP)	IC504(CAMERA MICROCONTROLLER)	IC602(TIMING SIGNAL GENERATOR)	IC605(SAMPLING HOLD&AGC CONTROL)	IC3001(LUMINANCE/CHROMINANCE SIGNAL PROCESS)	IC3002(TWIN CCD 1H DELAY)	X601	EVF C.B.A	IC901(EVF DRIVE)	COLOR EVF C.B.A	IC901(EVF RGB SIGNAL PROCESS)	LCD C.B.A.	IC9001(RGB SIGNAL PROCESS/LCD PANEL INDICATOR CONTROL)	IC9002(O.P. AMP)	CCD C.B.A.	LENS UNIT	EVF UNIT	COLOR EVF UNIT	CYLINDER UNIT
Camera Section	Frequency Adjustment	○					○				○												
	VCO Adjustment	○		○					○														
	Burst/Sync Level Adjustment	○		○					○														
	Hall Amp Adjustment	○	○	○	○	○		○												○			
	Auto Focus Adjustment	○		○															○				
	Gamma Adjustment	○		○															○				
	A/D Input Level Adjustment	○		○															○				
	Iris PWM Adjustment	○	○	○	○			○												○			
	Pedestal Level Adjustment	○	○	○															○				
	YH Level Adjustment	○	○	○				○											○				
	Auto white balance Adjustment	○	○	○				○											○				
VCR Section	Playback Video Level Adjustment	○		○					○														
	Sync Tip Frequency Adjustment	○		○					○														
	Deviation Adjustment	○		○					○														
	Rec Level Adjustment	○		○					○														
	Comb Filter Gain Adjustment	○		○					○	○													
	YNR Adjustment	○		○					○	○													
	Head Switching Position Adjustment	○		○																			○
Color EVF Section	PLL Adjustment	○		○										○									
	Pedestal/Contrast Adjustment	○		○										○								○	
	RB Sub Pedestal Adjustment	○		○										○	○							○	
	RB Sub Contrast Adjustment	○		○										○	○							○	
	Color Gain Adjustment	○		○										○	○							○	
Monochrome EVF Section	Vertical Size Adjustment											○	○								○		
	Centering Adjustment											○	○								○		
	Brightness Adjustment											○	○								○		
	Focus Adjustment											○	○								○		
LCD Section	PLL Adjustment	○		○												○							
	Pedestal Level Adjustment	○		○												○	○						
	Contrast Adjustment	○		○												○	○						
	RB Sub Pedestal Adjustment	○		○												○	○						
	RB Sub Contrast Adjustment	○		○												○	○						
	Color Gain Adjustment	○		○												○	○						
	VCOM level Adjustment	○		○												○	○	○					
	Common bias Adjustment	○		○												○	○						

Note: ○ : Adjustment Item

8.3.2. TEST EQUIPMENT

To do all of the Electrical Adjustment, the following equipments are required.

1. Dual-Trace Oscilloscope

Voltage Range: 0.001 to 50 V/Div.
Frequency Range: DC to 50 MHz
Probes: 10:1, 1:1

2. DVM (Digital Volt Meter)

3. Frequency Counter

4. Color TV Monitor

5. VHS-C Alignment Tape (VFMS0004H6C)

6. Vectorscope

7. Plastic Tip Driver

8. Audio Video Cable (VJAW0032)

9. Power Supply for Interface Box.

10. Side L FPC Unit (LSEQ0595)

11. EVF Unit
(For model with Monochrome EVF)

12. Color EVF Unit
(For model with Color EVF)

13. Personal Computer
PC: IBM PC/AT or compatible
OS: MS-DOS or MS-Windows
CPU: 486 or higher
Drive: 3.5 inch 1.44 MB floppy disk drive
Port: D-Sub-9-pin Serial or D-Sub-25-pin Serial
Monitor: VGA Color

14. PC-EVR Adjustment Program (VF0C2001DV10)
Note:
Ask latest version when placing order for PC-EVR Adjustment program.

15. CAAS Kit (VFKW1000)
Interface Box (VFKW1000A)
Camera Connecting Cable (VFKW1000B)
9 Pin RS-232C Cable (VFKW1000C)
25 Pin RS-232C Cable (VFKW1000D)

16. TP Adjustment Cable 40P (LSUP0005A)

17. TP Adjustment P.C.B. 40P (VFKW0123B)

18. TP Clip 36P (LSUP0005C)
(adjustment equipment with using Infinity Lens)

19. Lighting (Light Box (VFK1164LBX1) is recommended)

20. Infinity Lens (VFK1164TCM02)

(with Focus Chart)

21. 49 mm Ring (VFK1164TAR49)
22. Gray Scale Chart (VFK1164TFGS2)
23. Color Bar Chart (VFK1164TFCB2)
24. White Chart (VFK1164TFWC2)
25. Color Conversion Filter (VFK1164TFCT2)
    (adjustment equipment without using Infinity Lens)
26. Lighting (Halogen Lamp (2000 lux))
27. Reflection Chart
    Reflection Chart Set (VFKS003-N)
    (Reflection Chart Set consists of Gray Scale Chart (VFKS003A), Color Bar Chart (VFKS003B), Registration Chart (VFKS003C), and Resolution Chart (VFKS003D)) Gray Scale Chart (VFKS003A) Color Bar Chart (VFKS003B) Registration Chart (VFKS003C) Resolution Chart (VFKS003D) Color Chip Chart (VFKW0116)
28. Color Temperature Conversion Filter 80A or equivalent Color Temperature Conversion Filter
29. Color Compensating Filter CC05M
30. A.W.B. Adjustment Fixture (VFKW0066)

8.3.3. PREPARATION

1. Connect the Interface Box to the TP Board with Camera Connecting cable (VFKW1000B).
2. Connect the Interface Box to the Personal Computer with RS-232C cable (VFKW1000C or VFKW1000D).
3. Connect the TP Board to S301 on the camcorder. Refer to "HOW TO USE TP BOARD" in "SERVICE NOTES."
4. Connect the AC Adaptor and camcorder, and apply DC +6 V to the Interface Box.
5. Power on the camcorder.
   Note:
   In case that the camcorder is in DEMO mode, release DEMO mode as follows:

Power off the camcorder first. Then, disconnect the TP Board, and power on the camcorder. Then, press the STOP button over 5 seconds.

CAUTION:

1. **Do not connect or disconnect any cables while the camcorder is powered on.**
2. **Before using the TP Board, be sure to clean S301 pattern with alcohol and confirm that there is no dust in the TP Clip.**
3. **To achieve the best adjustment results, warm up the camcorder for approx. 30 minutes before adjustment.**
4. **When removing the TP Clip from S301 on the camcorder, be sure to pinch the grips.**

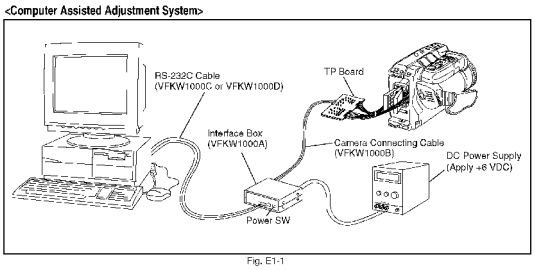


Fig. E1-1

6. **Set up the camcorder for adjustment as follows:**

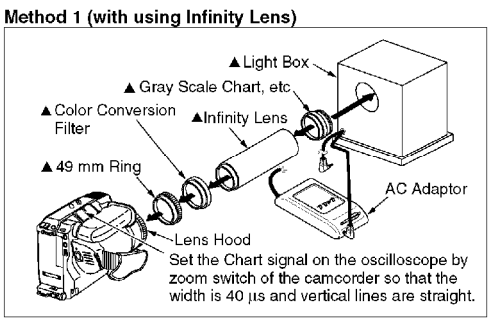

Method 1 (with using Infinity Lens)
▲Light Box
▲Gray Scale Chart, etc
▲Color Conversion Filter
▲Infinity Lens
▲49 mm Ring
AC Adaptor
Lens Hood
Set the Chart signal on the oscilloscope by zoom switch of the camcorder so that the width is 40 µs and vertical lines are straight.

Fig. E1-2

OR

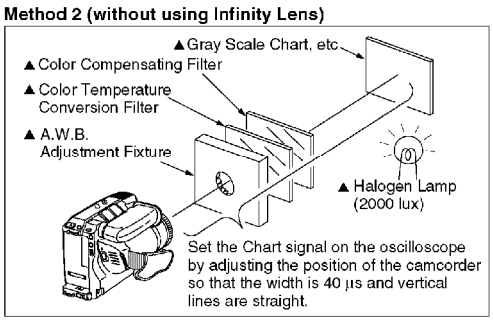

Method 2 (without using Infinity Lens)
▲Gray Scale Chart, etc
▲Color Compensating Filter
▲Color Temperature Conversion Filter
▲A.W.B. Adjustment Fixture
▲Halogen Lamp (2000 lux)
Set the Chart signal on the oscilloscope by adjusting the position of the camcorder so that the width is 40 µs and vertical lines are straight.

Fig. E1-3

Note for Method 1 :

1. **Connect the 49 mm Ring to the Infinity Lens. Then, insert it into the Light Box.**
2. **Set the camcorder so that the Lens Hood of the camcorder attaches straight and firmly against the 49 mm Ring.**
   When performing this operation, ensure that there is no gap between the Lens Hood and the 49 mm Ring and that no external light can enter.

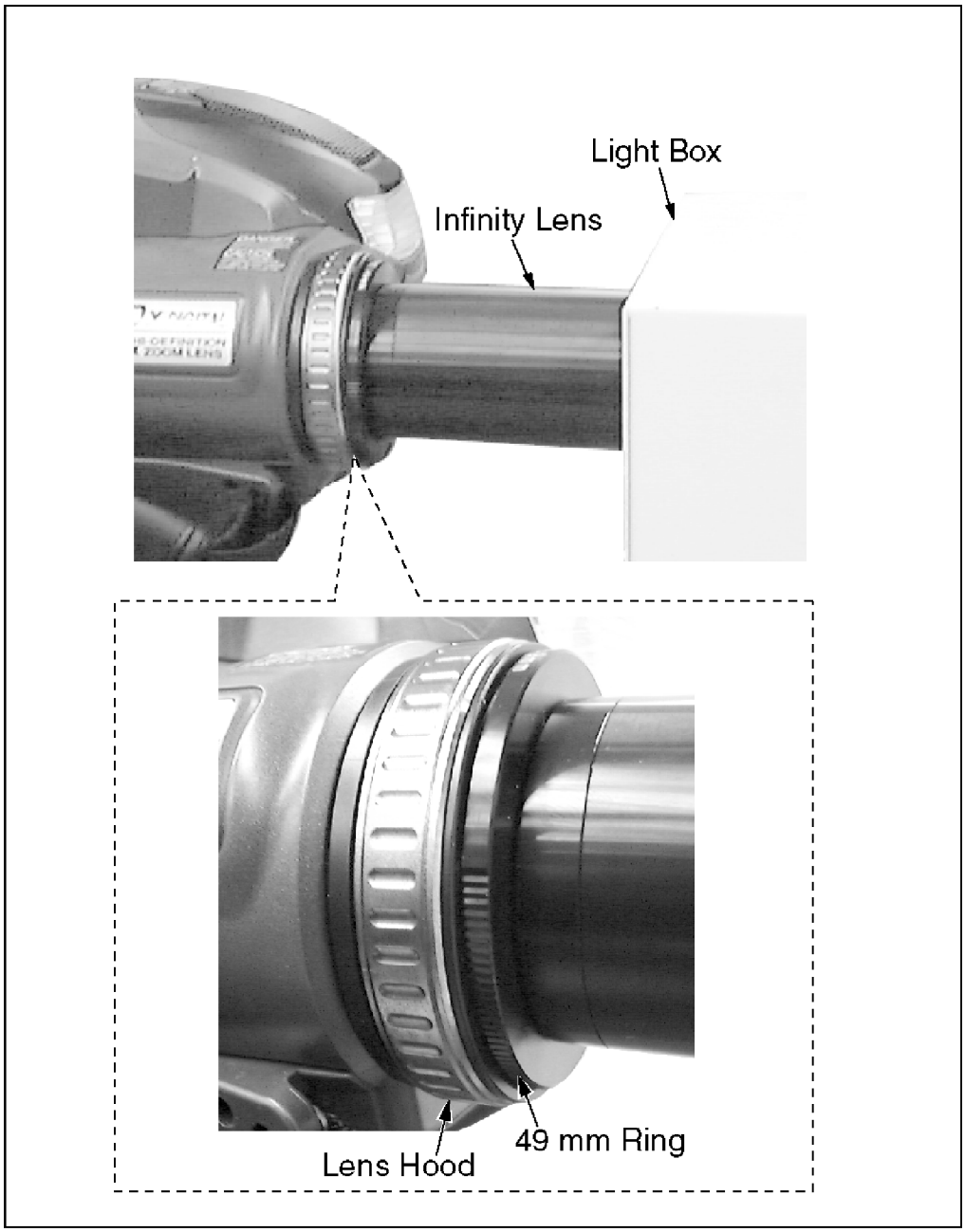


Fig. E1-4

For necessary equipments marked s in Fig. E1-2 and E1-3, refer to the following table.

Necessary equipment / Adjustment Item / ※(VR Adjustment)		Method 1							Method 2								
		Light Box	Infinity Lens / 49 mm Ring	Focus Chart	Gray Scale Chart	Color Bar Chart	White Chart	Color Conversion Filter	Halogen Lamp	Any object (High contrast)	Gray Scale Chart	Color Bar Chart	Color Chip Chart	White Chart	Color Temperature Conversion Filter	Color Compensating Filter	A.W.B. Adjustment Fixture
Camera Section	Frequency Adjustment ※	Not used															
	VCO Adjustment																
	Burst/Sync Level Adjustment																
	Hall Amp Adjustment																
	Auto Focus Adjustment (Automatic Adjustment)		○	○					Not available (Note 1)								
	Gamma Adjustment	○	○		○				○		○						
	A/D Input Level Adjustment	○	○		○				○		○						
	Iris PWM Adjustment	○	○		○				○		○						
	Pedestal Level Adjustment	○	○		○				○		○						
	YH Level Adjustment	○	○		○				○		○						
	Auto white balance Adjustment																
	1 Indoor Preset Adjustment	○	○				○		○					○			
	2 Indoor Input Adjustment	○	○				○		○					○			
	3 Color Phase & R-Y, B-Y Gain Adjustment (Indoor Mode)	○	○			○			○				○				
	4 Outdoor Preset Adjustment	○	○				○	○	○					○	○	○	○
	5 Outdoor Input Adjustment	○	○				○	○	○					○	○	○	○
	6 Color Phase & R-Y, B-Y Gain Adjustment (Outdoor Mode)	○	○			○		○	○				○		○	○	○
VCR Section	Playback Video Level Adjustment	Not used															
	Sync Tip Frequency Adjustment																
	Deviation Adjustment	○	○		○				○		○						
	Rec Level Adjustment	Not used															
	Comb Filter Gain Adjustment	○				○			○			○					
	YNR Adjustment	Not used															
	Head Switching Position Adjustment																
Color EVF Section	PLL Adjustment																
	Pedestal/Contrast Adjustment	○	○		○				○		○						
	RB Sub Pedestal Adjustment	○	○		○				○		○						
	RB Sub Contrast Adjustment	○	○		○				○		○						
	Color Gain Adjustment	○	○			○			○			○					
Monochrome EVF Section	Vertical Size Adjustment ※	○	○		○				○		○						
	Centering Adjustment ※	○	○		○				○		○						
	Brightness Adjustment ※	○	○			○			○			○					
	Focus Adjustment ※	○	○		○				○		○						
LCD Section	PLL Adjustment	Not used															
	Pedestal Level Adjustment	○	○		○				○		○						
	Contrast Adjustment	○	○		○				○		○						
	RB Sub Pedestal Level Adjustment	○	○		○				○		○						
	RB Sub Contrast Level Adjustment	○	○		○				○		○						
	Color Gain Adjustment	○	○			○			○			○					
	VCOM Level Adjustment	○	○		○				○		○						
	Common bias Adjustment	○	○		○				○		○						

Note 1: Auto Focus adjustment (Automatic adjustment) is available for only Method 1.

8.3.4. SET UP OF PC-EVR ADJUSTMENT PROGRAM

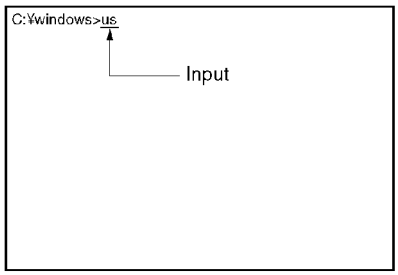
1. Turn on the Personal Computer.
Windows ® 95 will be set up automatically.

2. Restart it in MS-DOS mode.

3. Change the current directory to the one including the PC-EVR Adjustment Program and start up the PC-EVR Adjustment Program as follows.

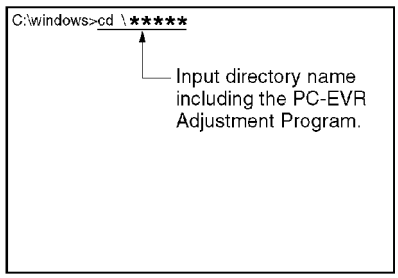
A. If MS-DOS is Japanese mode, input "us," and then press "ENTER" key to be US mode on.

Fig.E2-1



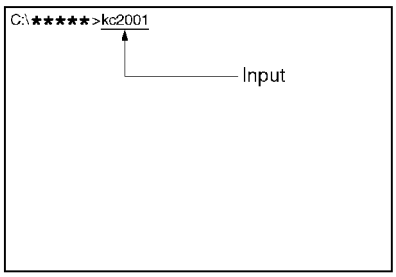
B. Input "cd \ ,✱✱✱✱✱" and then press "ENTER" key to change the directory to the one including the PC-EVR Adjustment Program.

Fig.E2-2



C. Input "kc2001," and then press "ENTER" key to start up the PC-EVR Adjustment Program.

Fig.E2-3



"Select Model Number Menu" will be displayed.

4. Select the model number which you are servicing, and then press "Enter" key. The starting display will be displayed.

5. Perform set up items according to menu until "Main Menu" is displayed.

6. Select "Sub Menu" to adjust or check, etc. the camcorder.

8.3.5. HOW TO USE MAIN MENU

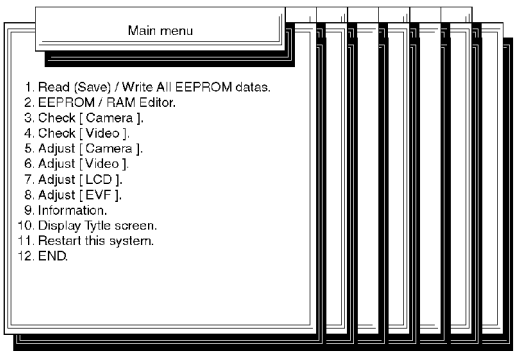
8.3.5.1. Main Menu

Select "Sub Menu" by pressing (UP/DOWN) key in Main Menu. Then, adjust or check the camcorder according to the menu. Then, press "ENTER" key. "Sub Menu" will be displayed.

Note:

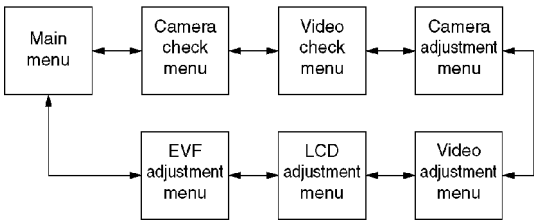
Menu 5 through 8 are needed for adjustment.

Fig.E3-1


Main menu
1. Read (Save) / Write All EEPROM datas.
2. EEPROM / RAM Editor.
3. Check [Camera].
4. Check [Video].
5. Adjust [Camera].
6. Adjust [Video].
7. Adjust [LCD].
8. Adjust [EVF].
9. Information.
10. Display Tytle screen.
11. Restart this system.
12. END.

Also, by pressing key, "Sub Menu" can be seen in order below.

Fig.E3-2



Note:

The adjusted data is stored to EEPROM IC after each adjustment.

8.3.6. VR ADJUSTMENT

8.3.6.1. CAMERA SECTION

8.3.6.1.1. Frequency Adjustment

Purpose:

To set the chroma subcarrier.

Symptom of Misadjustment:

The picture will be no color. (The burst shifts)

Test Point :

TP601 (Main C.B.A.)

Adjustment :

C610 (Main C.B.A.)

Specification :

14.31818 MHz±80 Hz

Input :

Mode :

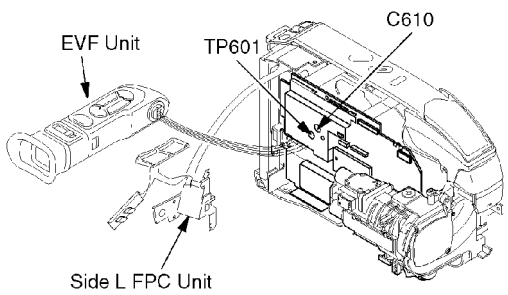
Equipment :

Frequency counter

Adjustment Procedure:

1. **Remove the Side Case (L) Unit to gain access to TP601 and C610 on the Main C.B.A.**
   Connect the Side L FPC unit to the camcorder.
2. **Connect the Frequency counter to TP601 on the Main C.B.A.**
3. **Adjust C610 on the Main C.B.A. so that the frequency becomes 14.31818 MHz±80 Hz.**

Fig.E4-1



8.3.6.2. MONOCHROME EVF SECTION

Note:

Camcorder need NOT to be powered off and on after each adjustment procedure.

Preparation

1. **Before adjusting the Monochrome EVF, Camera section and VCR section adjustments must be completely adjusted.**
2. **Remove the EVF Case B Unit to gain access to VRs on the EVF C.B.A. (Refer to "DISASSEMBLY/ASSEMBLY PROCEDURES".)**

8.3.6.2.1. Vertical Size Adjustment

Purpose:

To set the standard vertical size on the EVF picture.

Symptom of Misadjustment:

The vertical EVF picture size will be abnormal.

Test Point :

Adjustment :

VR901 (EVF C.B.A.)

Specification :

Best Vertical size

Input :

Gray Scale Chart

Mode :

SP REC

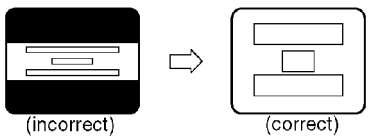
Equipment :

Viewfinder

Adjustment Procedure:

1. **Aim the camcorder at the gray scale chart.**
2. **Adjust the VERTICAL SIZE CONTROL (VR901) so that the vertical picture size becomes correct.**

Fig.E4-2



8.3.6.2.2. Centering Adjustment

Purpose:

To set the optimum picture position on the EVF picture.

Symptom of Misadjustment:

The EVF picture will be shifted.

Test Point :

Adjustment :

Deflection Yoke Centering Magnet

Specification :

The picture position becomes centered on the EVF picture

Input :

Gray Scale Chart

Mode :

SP REC

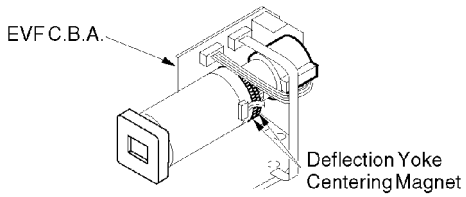
Equipment :

Viewfinder

Adjustment Procedure:

1. **Aim the camcorder at the gray scale chart.**
2. **Adjust the Deflection Yoke Centering Magnet by turning them so that the picture is centered in the Viewfinder.**

Fig.E4-3



8.3.6.2.3. Brightness Adjustment

Purpose:

To set the optimum EVF brightness level.

Symptom of Misadjustment:

The EVF picture will be too white or black.

Test Point :

Adjustment :

VR903 (EVF C.B.A.)

Specification :

Natural Gradation

Input :

Color Bar Chart

Mode :

SP REC

Equipment :

Viewfinder

Adjustment Procedure:

1. **Aim the camcorder at the color bar chart.**
2. **Adjust the BRIGHTNESS CONTROL (VR903) so that the brightness in the Viewfinder becomes natural gradation.**

8.3.6.2.4. Focus Adjustment

Purpose:

To set the optimum focus on the EVF picture.

Symptom of Misadjustment:

The EVF picture will be out of focus.

Test Point :

Adjustment :

VR902 (EVF C.B.A.)

Specification :

Optimum focus

Input :

Gray Scale Chart

Mode :

SP REC

Equipment :

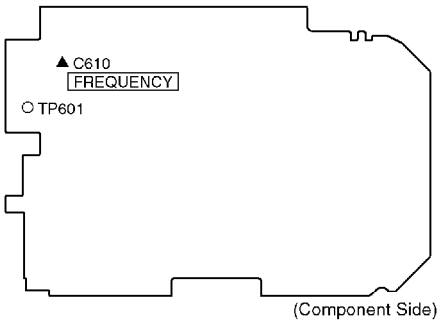
Viewfinder

Adjustment Procedure:

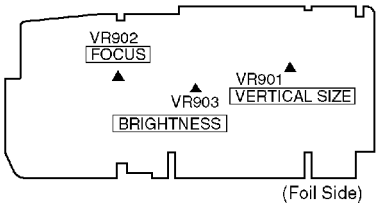
1. **Aim the camcorder at the gray scale chart.**
2. **Adjust the FOCUS CONTROL (VR902) to optimum focus in the Viewfinder.**

8.3.7. TEST POINTS AND CONTROL LOCATION

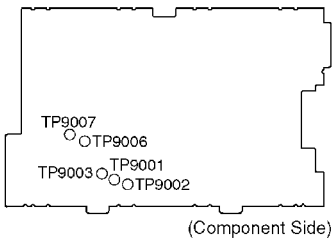
Main C.B.A.



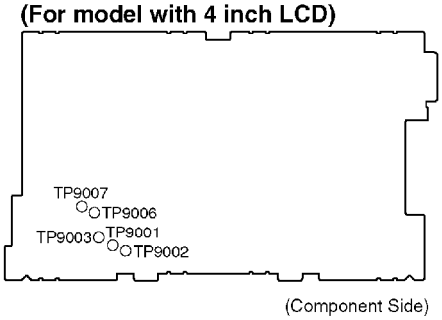
EVF C.B.A. (For model with Monochrome EVF)



LCD C.B.A.
(For model with 2.5 and 3 inch LCD)



LCD C.B.A.
(For model with 4 inch LCD)



Test Point Information

○ Test Point with no Test Pin.

9. SCHEMATIC DIAGRAM

9.1. SCHEMATIC DIAGRAM & CIRCUIT BOARD LAYOUT NOTES

9.2. MAIN SCHEMATIC DIAGRAMS

9.3. LCD / RELAY SCHEMATIC DIAGRAMS

(Model: PV-L501, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, VM-L451)

(Model: PV-L651, PV-661, PV-L681, PV-L61)

9.4. EVF SCHEMATIC DIAGRAM

(Model: VM-D101, PV-L501)

9.5. COLOR EVF SCHEMATIC DIAGRAM

(Model: PV-D301, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, PV-L651, PV-L661, PV-L681, PV-L61, VM-L451)

9.6. HEAD AMP SCHEMATIC DIAGRAM

9.7. TOP OPERATION / SIDE L FPC / VCR OPERATION / MECHANISM FPC SCHEMATIC DIAGRAM

9.8. MIC/IR / BATTERY CATCHER SCHEMATIC DIAGRAM

9.9. INTERCONNECTION SCHEMATIC DIAGRAM

9.10. SIGNAL WAVEFORM

9.11. VOLTAGE CHART

10. CIRCUIT BOARD LAYOUT

10.1. MAIN C.B.A.

10.2. LCD C.B.A.

(Model: PV-L501, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, VM-L451)

(Model: PV-L651, PV-661, PV-L681, PV-L61)

10.3. EVF C.B.A.

(Model: VM-D101, PV-L501)

10.4. COLOR EVF C.B.A.

(Model: PV-D301, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, PV-L651, PV-L661, PV-L681, PV-L61, VM-L451)

10.5. RELAY C.B.A.

(Model: PV-L501, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, PV-L651, PV-661, PV-L681, PV-L61, VM-L451)

10.6. MECHANISM FPC UNIT

11. BLOCK DIAGRAMS

11.1. OVERALL BLOCK DIAGRAM

11.2. CCD DRIVE BLOCK DIAGRAM

11.3. PROCESS BLOCK DIAGRAM

11.4. VIDEO BLOCK DIAGRAM

11.5. AUDIO BLOCK DIAGRAM

11.6. SYSTEM CONTROL BLOCK DIAGRAM

11.7. SERVO BLOCK DIAGRAM

11.8. AF BLOCK DIAGRAM

11.9. POWER SUPPLY BLOCK DIAGRAM

11.10. LCD POWER BLOCK DIAGRAM

(Model: PV-L501, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, PV-L651, PV-661, PV-L681, PV-L61, VM-L451)

11.11. LCD BLOCK DIAGRAM

(Model: PV-L501, PV-L551, PV-L561, PV-L581, PV-L51)

(Model: PV-L601, VM-L451)

(Model: PV-L651, PV-L661, PV-L681, PV-L61)

11.12. EVF BLOCK DIAGRAM

(Model: VM-D101, PV-L501)

11.13. COLOR EVF BLOCK DIAGRAM

(Model: PV-D301, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, PV-L651, PV-L661, PV-L681, PV-L61, VM-L451)

12. EXPLODED VIEWS

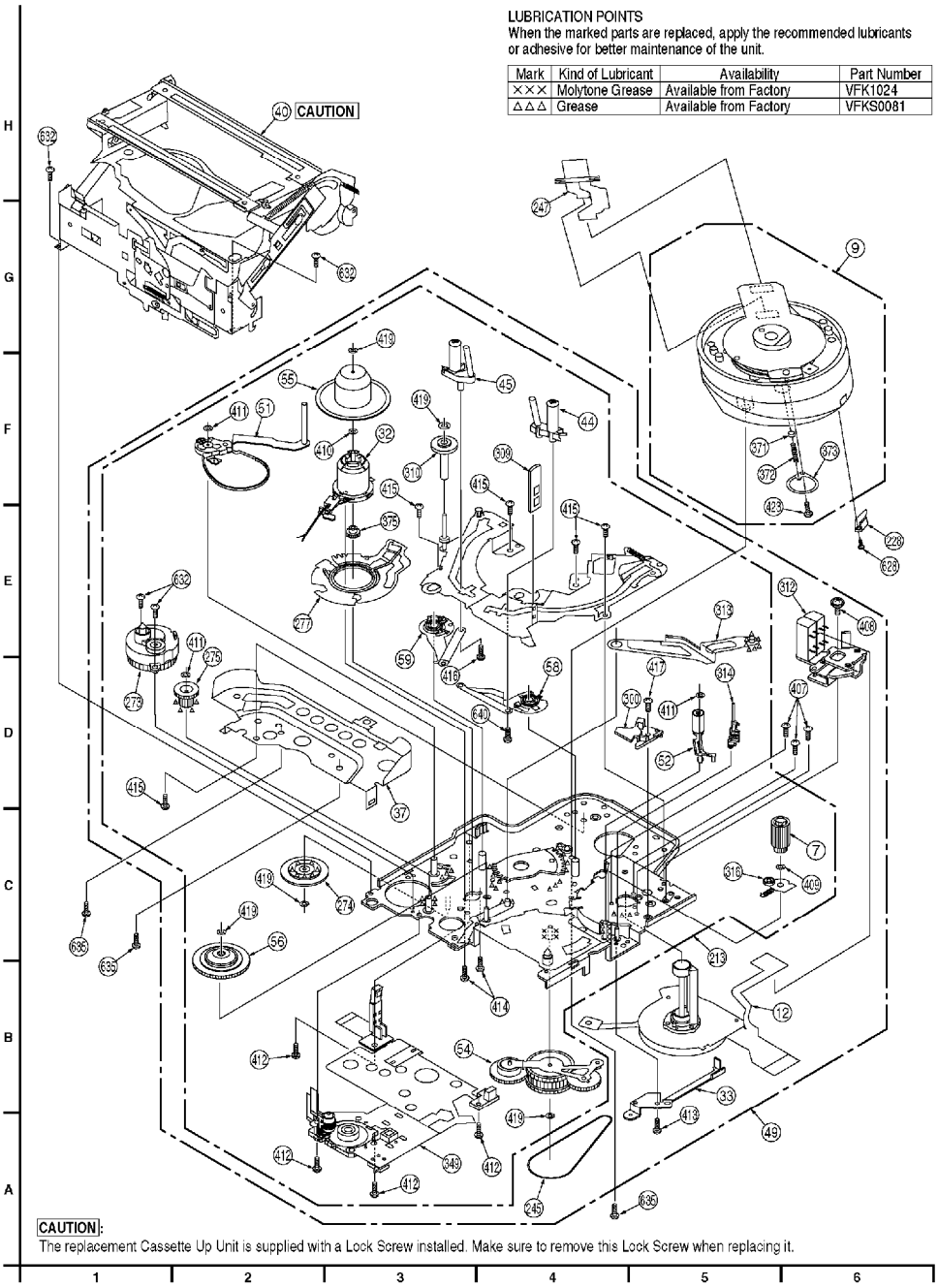
12.1. VCR MECHANISM SECTION

❶ VCR MECHANISM SECTION

Note: Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.

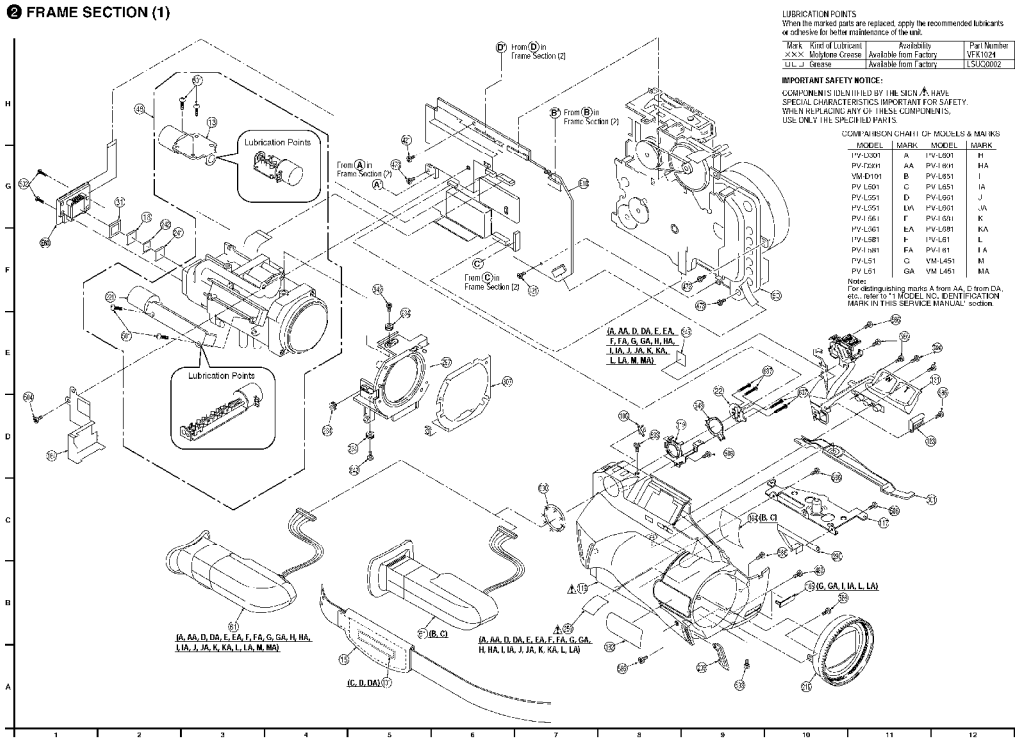
LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
×××	Molytone Grease	Available from Factory	VFK1024
△△△	Grease	Available from Factory	VFKS0081



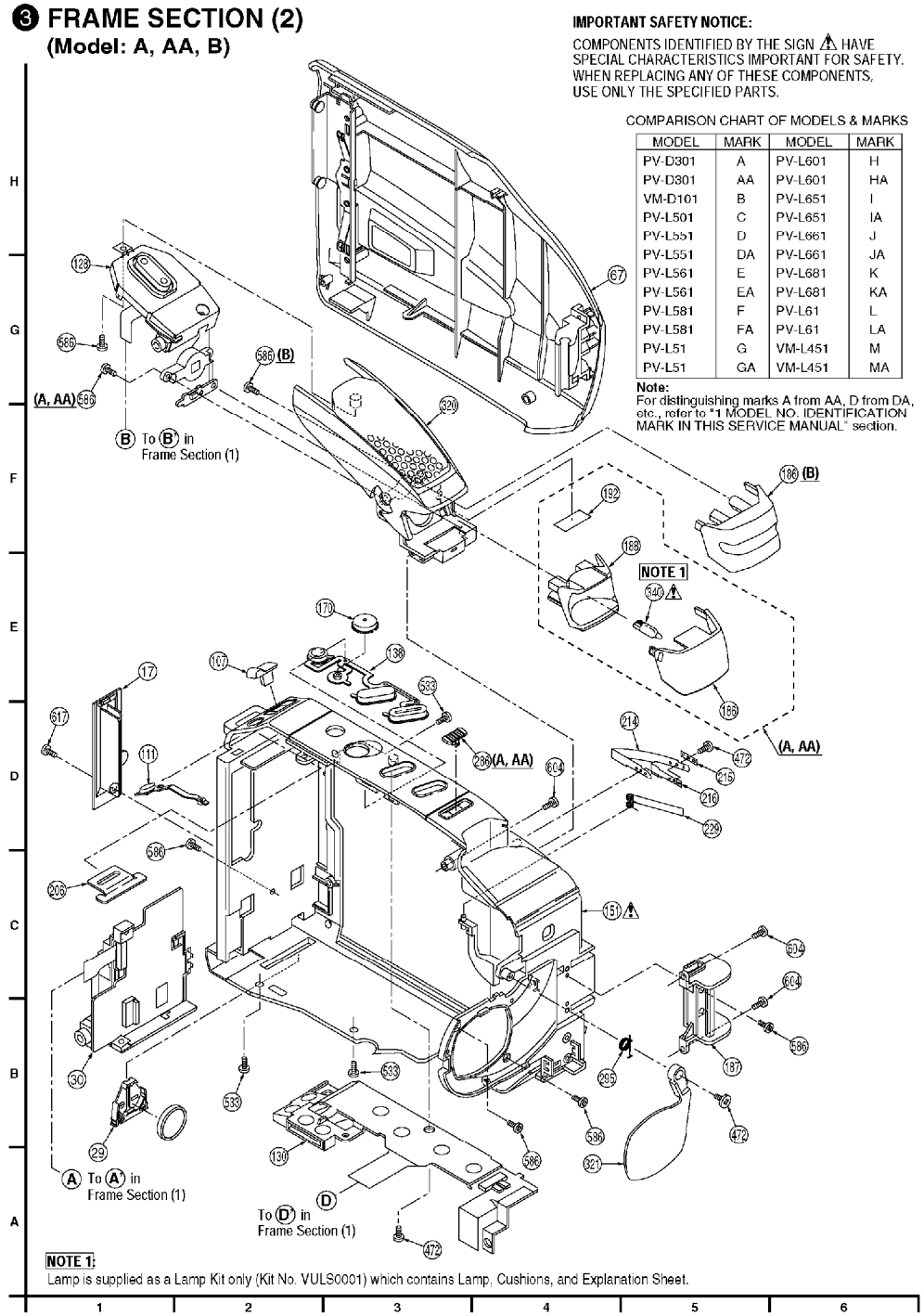
CAUTION:
The replacement Cassette Up Unit is supplied with a Lock Screw installed. Make sure to remove this Lock Screw when replacing it.

12.2. FRAME SECTION (1)

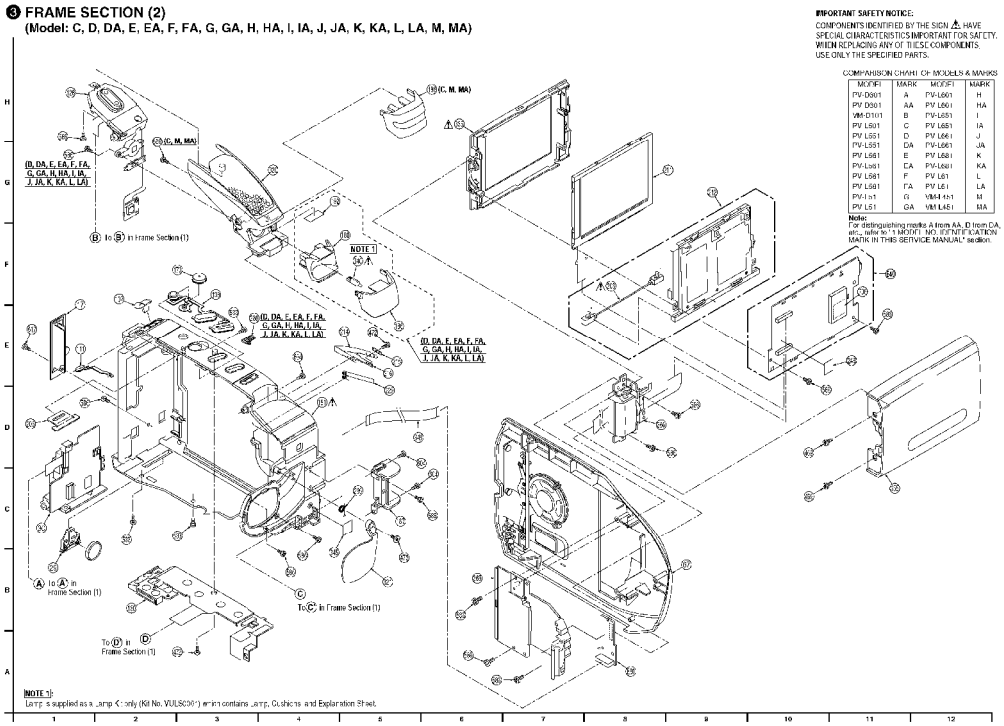

❷ FRAME SECTION (1)
LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.
Mark | Kind of Lubricant | Availability | Part Number
XXX | Molybdna Grease | Available from Factory | VFK1024
MLJ | Grease | Available from Factory | LSXJ0002
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.
COMPARISON CHART OF MODELS & MARKS
MODEL | MARK | MODEL | MARK
PV-D301 | A | PV-L601 | H
PV-D301 | AA | PV-L601 | HA
VM-D101 | B | PV-L651 | I
PV-L501 | C | PV-L651 | IA
PV-L551 | D | PV-L601 | J
PV-L551 | DA | PV-L601 | JA
PV-L561 | F | PV-L651 | K
PV-L561 | EA | PV-L681 | KA
PV-L581 | E | PV-L61 | L
PV-L581 | FA | PV-L61 | LA
PV-L51 | G | VM-L451 | M
PV-L51 | GA | VM-L451 | MA
Notes:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.
Lubrication Points
Lubrication Points
From Ⓐ in Frame Section [2]
From Ⓑ in Frame Section [2]
From Ⓒ in Frame Section [2]
From Ⓓ in Frame Section [2]
(A, AA, D, DA, E, EA, F, FA, G, GA, H, HA, I, IA, J, JA, K, KA, L, LA, M, MA)
(B, C)
(A, AA, D, DA, E, EA, F, FA, G, GA, H, HA, I, IA, J, JA, K, KA, L, LA, M, MA)
(B, C)
(C, D, DA)
(A, AA, D, DA, E, EA, F, FA, G, GA, H, HA, I, IA, J, JA, K, KA, L, LA)
(G, GA, I, IA, L, LA)

12.3. FRAME SECTION (2)

(Model: PV-D301, VM-D101)

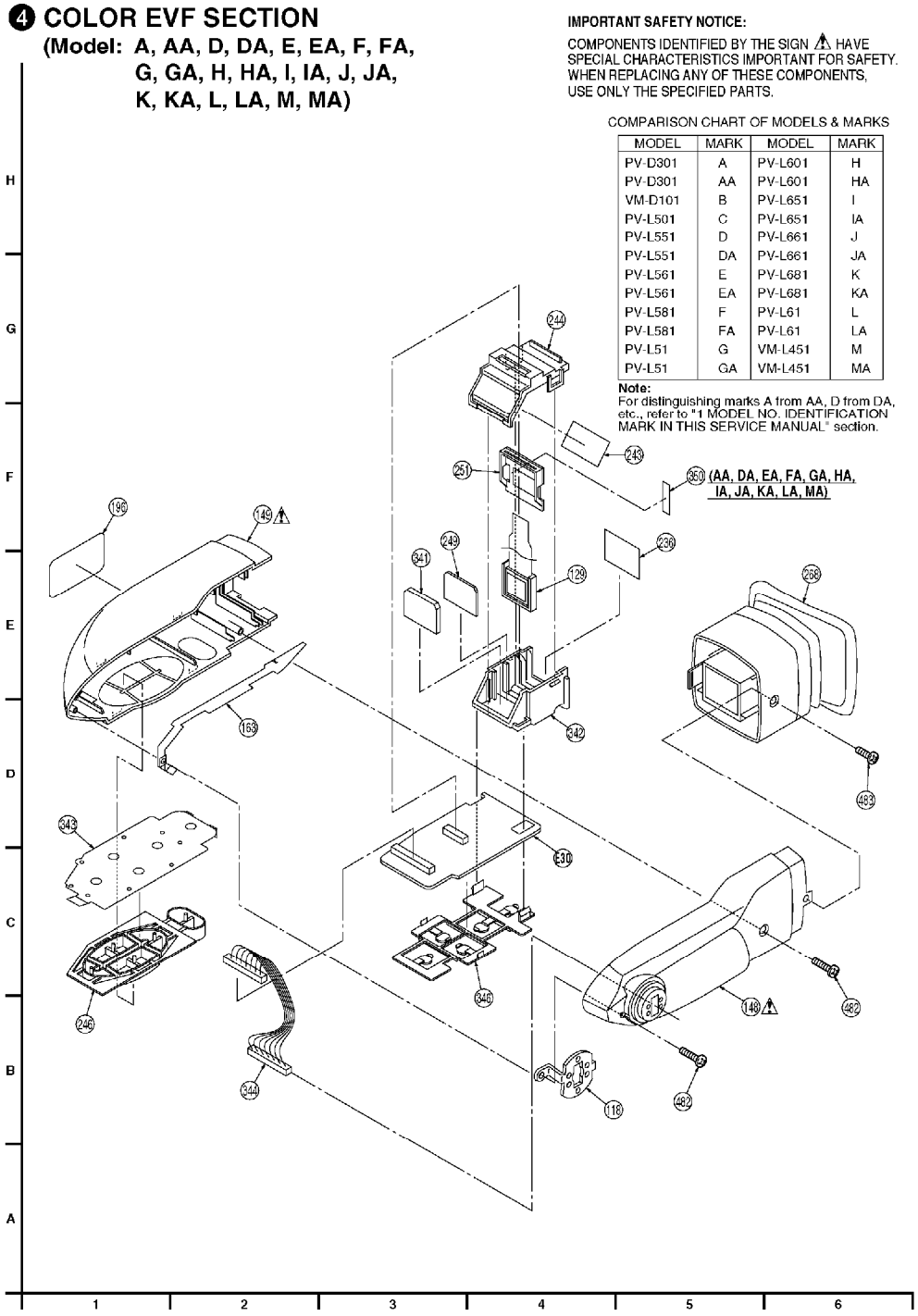

❸ FRAME SECTION (2)
(Model: A, AA, B)
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.
COMPARISON CHART OF MODELS & MARKS
MODEL | MARK | MODEL | MARK
PV-D301 | A | PV-L601 | H
PV-D301 | AA | PV-L601 | HA
VM-D101 | B | PV-L651 | I
PV-L501 | C | PV-L651 | IA
PV-L551 | D | PV-L661 | J
PV-L551 | DA | PV-L661 | JA
PV-L561 | E | PV-L681 | K
PV-L561 | EA | PV-L681 | KA
PV-L581 | F | PV-L61 | L
PV-L581 | FA | PV-L61 | LA
PV-L51 | G | VM-L451 | M
PV-L51 | GA | VM-L451 | MA
Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.
(A, AA)
(B)
NOTE 1
Ⓑ To Ⓑ in Frame Section (1)
Ⓐ To Ⓐ in Frame Section (1)
Ⓓ To Ⓓ in Frame Section (1)
NOTE 1:
Lamp is supplied as a Lamp Kit only (Kit No. VULS0001) which contains Lamp, Cushions, and Explanation Sheet.

(Model: PV-L501, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, PV-L651, PV-L661, PV-L681, PV-L61, VM-L451)


❸ FRAME SECTION (2)
(Model: C, D, DA, E, EA, F, FA, G, GA, H, HA, I, IA, J, JA, K, KA, L, LA, M, MA)
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.
COMPARISON CHART OF MODELS & MARKS
MODEL MARK MODEL MARK
PV-D301 A PV-L601 H
PV-D301 AA PV-L601 HA
VM-D101 B PV-L651 I
PV-L551 C PV-L651 IA
PV-L551 D PV-L661 J
PV-L551 DA PV-L661 JA
PV-L561 E PV-L681 K
PV-L561 EA PV-L681 KA
PV-L581 F PV-L61 L
PV-L581 FA PV-L61 LA
PV-L51 G VM-L451 M
PV-L51 GA VM-L451 MA
Notes:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.
(C, M, MA)
(B, DA, E, EA, F, FA, G, GA, H, HA, I, IA, J, JA, K, KA, L, LA)
Ⓑ to Ⓑ in Frame Section (1)
NOTE 1
(D, DA, E, EA, F, FA, G, GA, H, HA, I, IA, J, JA, K, KA, L, LA)
Ⓐ to Ⓐ in Frame Section (1)
Ⓒ to Ⓒ in Frame Section (1)
Ⓓ to Ⓓ in Frame Section (1)
NOTE 1:
Lamp is supplied as a Lamp Kit only (Kit No. VUILS301) which contains Lamp, Cushions and Explanation Sheet.

12.4. COLOR EVF SECTION

(Model: PV-D301, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, PV-L651, PV-L661, PV-L681, PV-L61, VM-L451)


❹ COLOR EVF SECTION
(Model: A, AA, D, DA, E, EA, F, FA, G, GA, H, HA, I, IA, J, JA, K, KA, L, LA, M, MA)
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.
COMPARISON CHART OF MODELS & MARKS
MODEL MARK MODEL MARK
PV-D301 A PV-L601 H
PV-D301 AA PV-L601 HA
VM-D101 B PV-L651 I
PV-L501 C PV-L651 IA
PV-L551 D PV-L661 J
PV-L551 DA PV-L661 JA
PV-L561 E PV-L681 K
PV-L561 EA PV-L681 KA
PV-L581 F PV-L61 L
PV-L581 FA PV-L61 LA
PV-L51 G VM-L451 M
PV-L51 GA VM-L451 MA
Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.
(AA, DA, EA, FA, GA, HA, IA, JA, KA, LA, MA)
H
G
F
E
D
C
B
A
1
2
3
4
5
6

12.5. EVF SECTION

(Model: VM-D101, PV-L501)

❹ EVF SECTION
(Model: B, C)

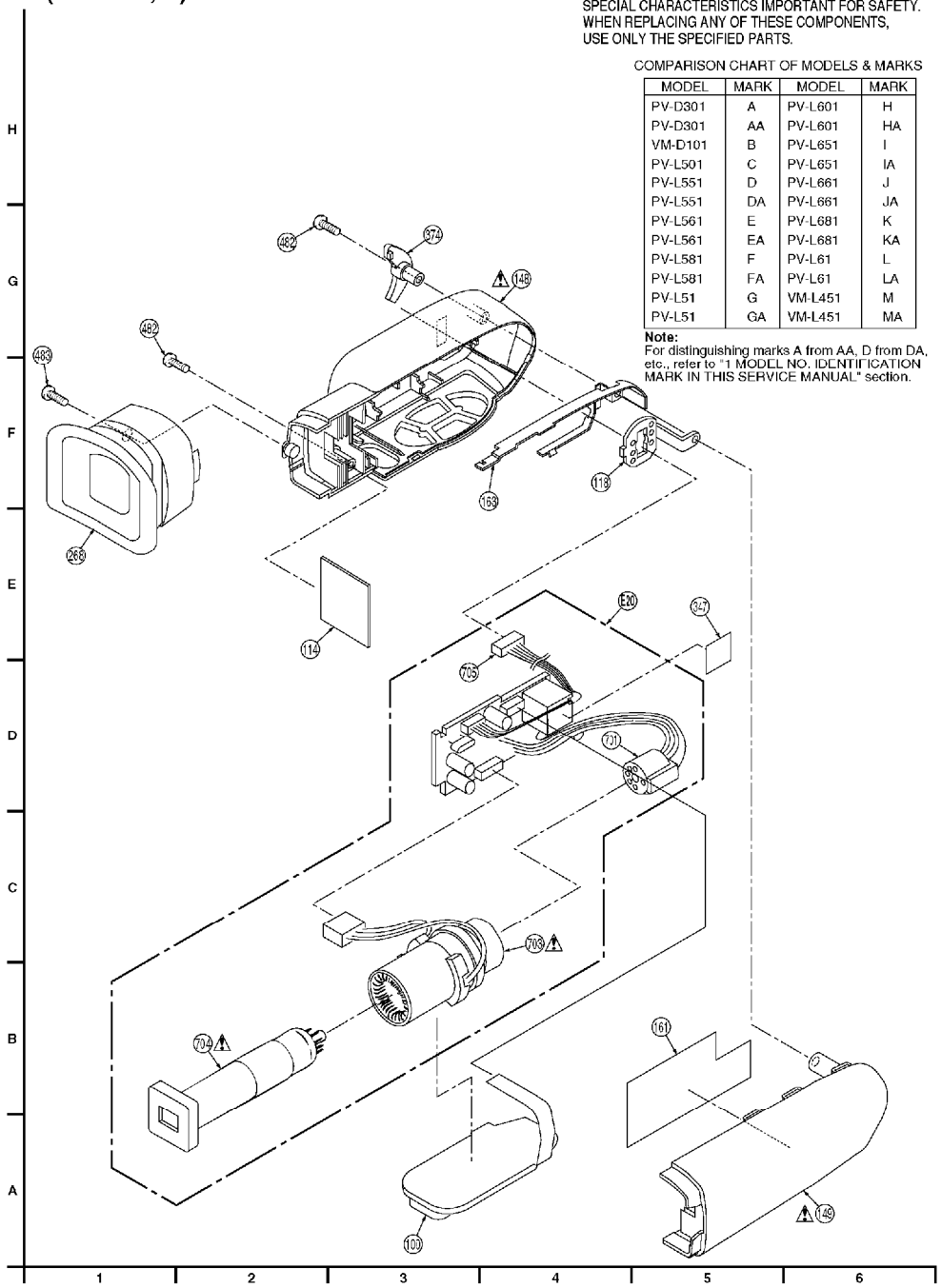
IMPORTANT SAFETY NOTICE:

COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS

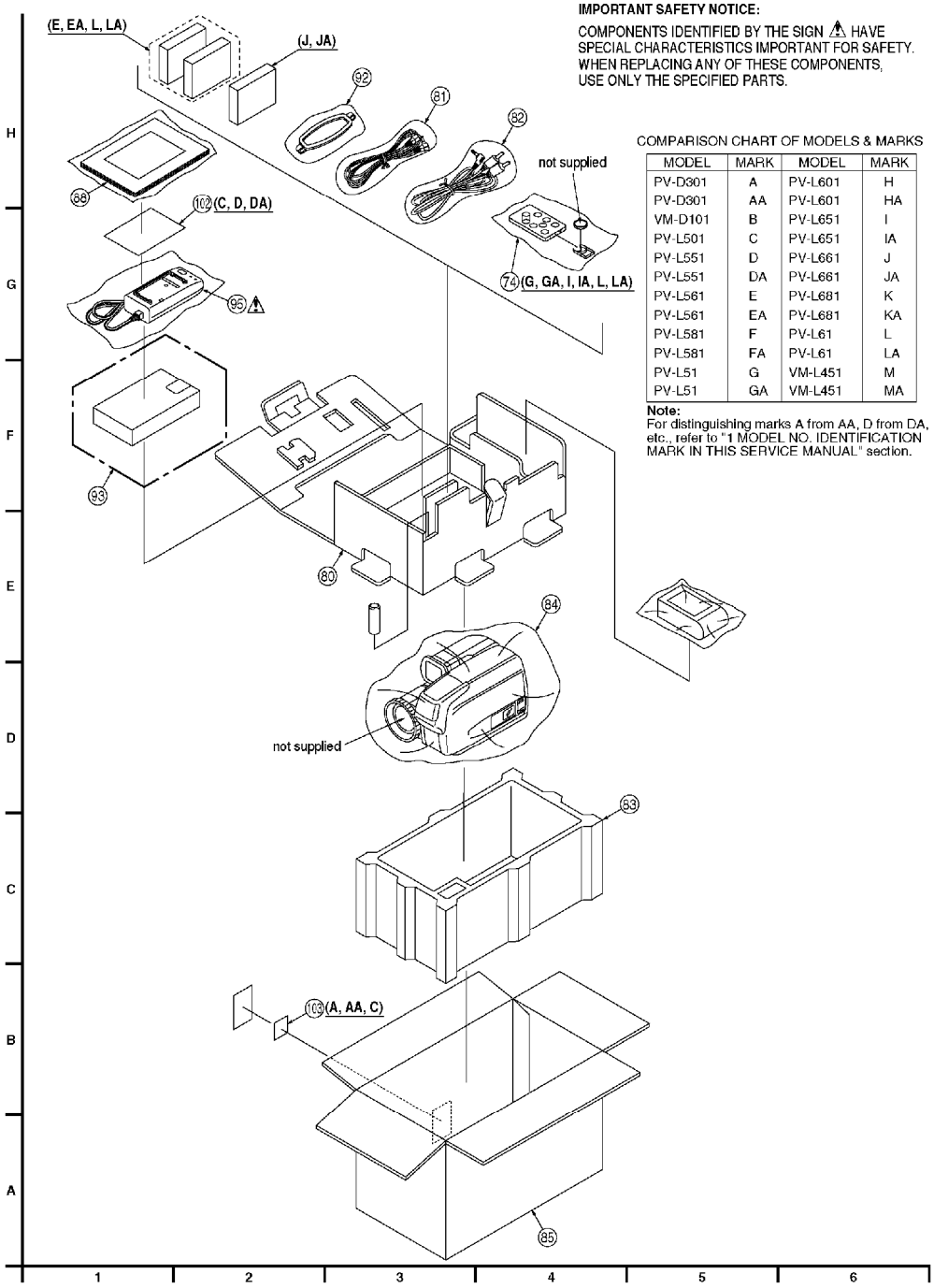
MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.



12.6. PACKING PARTS AND ACCESSORIES SECTION

❺ PACKING PARTS AND ACCESSORIES SECTION


IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.
COMPARISON CHART OF MODELS & MARKS
MODEL | MARK | MODEL | MARK
PV-D301 | A | PV-L601 | H
PV-D301 | AA | PV-L601 | HA
VM-D101 | B | PV-L651 | I
PV-L501 | C | PV-L651 | IA
PV-L551 | D | PV-L661 | J
PV-L551 | DA | PV-L661 | JA
PV-L561 | E | PV-L681 | K
PV-L561 | EA | PV-L681 | KA
PV-L581 | F | PV-L61 | L
PV-L581 | FA | PV-L61 | LA
PV-L51 | G | VM-L451 | M
PV-L51 | GA | VM-L451 | MA
Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.
(E, EA, L, LA)
(J, JA)
92
81
82
not supplied
88
102 (C, D, DA)
74 (G, GA, I, IA, L, LA)
95
93
80
84
not supplied
83
103 (A, AA, C)
85
H
G
F
E
D
C
B
A
1
2
3
4
5
6

13. REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

13.1. REPLACEMENT NOTES

13.1.1. General Notes

1. Use only original replacement parts:

To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.

2. **IMPORTANT SAFETY NOTICE**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.
3. **SPECIAL NOTE**
   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.
4. **Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.**
5. **Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.**
6. **Parts with mark "VED" in the Remarks column are supplied from VED. Others are supplied from MKI.**
7. **Item numbers with capital letter E (Example: E10, E20,...) in the Ref. No. column are shown in the exploded views.**

13.1.2. Mechanical Replacement Notes

1. **Section No. of parts shown in Exploded Views are indicated in the Remarks column.**
2. **Abbreviation**
   RTL: Retention Time Limited
   This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.
3. **Cut Washers (Ref No. 409, 411, and 419) are not reusable. If removed, install a new one.**
4. **After replacing Mechanism Chassis Ass'y (Ref. No. 49) or**

Mechanism Chassis Sub Ass'y (Ref. No. 213), perform the Tape Interchangeability Adjustment procedures. Refer to "TAPE INTERCHANGEABILITY ADJUSTMENT."

5. **Lamp Kit (Ref No. 340) replacement note for models PV-D301, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, PV-L651, PV-L661, PV-L681, PV-L61:**
   Lamp is supplied as a Lamp Kit only (Kit No. VULS0001) which contains Lamp, Cushion, and Explanation Sheet.
6. **Color EVF Unit (Ref No. 61) replacement note for models PV-D301, PV-L551, PV-L561, PV-L581, PV-L51, PV-L601, PV-L651, PV-L661, PV-L681, PV-L61, VM-L451:**
   For part standardization of the Color EVF unit replacement parts, only the Color EVF unit which is listed with its part number in the parts list will be supplied.

13.1.3. Electrical Replacement Notes

1. **Unless otherwise specified;**
   All resistors are in Ω, K = 1 000 Ω, M = 1 000 kΩ.
2. **Abbreviation**
   RTL: Retention Time Limited
   This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.
   NR: Non Repairable Board Ass'y
   MGF CHIP: Metal Glaze Film Chip
   C CHIP: Ceramic Chip
   COMPLX CMP: Complex Component
   W FLMPRF: Wirewound Flameproof
   C.B.A.: Circuit Board Assembly
   P.C.B.: Printed Circuit Board
   E.S.D.: Electrostatically Sensitive Devices
3. **SERVICE OF CHIP PARTS**
   When servicing chip parts, please use a soldering iron of less than 30 W. Refer to "IC, TRANSISTOR AND CHIP PART INFORMATION" page.

4. When replacing 0 Ω resistor, a wire can be substituted for it.

5. IC306 replacement note:
When replacing this IC, be sure to write the initial data with PC-EVR Adjustment Program.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

13.2. MECHANICAL REPLACEMENT PARTS LIST

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

MECHANISM PARTS ON CHASSIS

Ref. No.	Part No.	Part Name & Description	Remarks
7	VDGW0072	TAKE GEAR	1
9	VEGS0438	CYLINDER UNIT (A,AA,B,C,D,DA,E,EA,G,GA,H,HA,I,IA,J,JA,L,LA,M,MA)	1
9	LSEG0004	CYLINDER UNIT (A,AA,B,C,D,DA,E,EA,G,GA,H,HA,I,IA,J,JA,L,LA,M,MA)	1
9	VEGS0439	CYLINDER UNIT (F,FA,K,KA)	1
9	LSEG0005	CYLINDER UNIT (F,FA,K,KA)	1
12	VEMS0337	CAPSTAN UNIT	1
13	LSEM0031	FOCUS MOTOR UNIT	2
15	LSGQ0031	HAND STRAP (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	2
15	LSGQ0032	HAND STRAP (B,M,MA)	2
16	LSFL0078	OPTICAL FILTER	2
17	VKFW0066	EVR COVER	3
22	LSMA0477	SPRING SUPPORTER	2
29	LSMD0264	BATTERY COVER	3
30	LSEQ0588	BATTERY CATCHER UNIT (A,AA,B)	3
30	LSEQ0589	BATTERY CATCHER UNIT (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	3
31	LSMG0080	FILTER RUBBER	2
32	VEMW0087	LOADING MOTOR UNIT,2W	1
33	VMAW0745	P.C.B. ANGLE	1
37	VMAW0744	MECHANISM SUPPORT ANGLE	1
40	VXYS1370	CASSETTE UP UNIT (A,AA,B)	1
40	VXYS1369	CASSETTE UP UNIT (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	1
44	VXDW0196	TAKEUP POST UNIT	1
45	VXDW0187	SUPPLY POST UNIT	1
48	LSXN0016	LENS UNIT	2
49	LSXY0250	MECHANISM CHASSIS ASS'Y	1 RTL
50	LSXY0215	VCR MECHANISM CHASSIS ASS'Y (A,AA,B)	2 RTL
50	LSXY0216	VCR MECHANISM CHASSIS ASS'Y (C,D,DA,E,EA,G,GA,H,HA,I,IA,J,JA,L,LA,M,MA)	2 RTL
50	LSXY0217	VCR MECHANISM CHASSIS ASS'Y (F,FA,K,KA)	2
51	VXLW0080	TENSION UNIT	1
52	VXLS1131	PINCH ARM UNIT	1
54	VXLS1108	IDLER ARM UNIT	1
55	VXPW0025	REEL TABLE UNIT	1
56	VXPW0024	REV CLUTCH	1
58	VXLW0078	TAKEUP LOADING ARM UNIT	1
59	VXLW0077	SUPPLY LOADING ARM UNIT	1
61	LSYK0652	COLOR ELECTRONIC VIEWFINDER UNIT (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	2
61	LSYK0651	COLOR ELECTRONIC VIEWFINDER UNIT (M,MA)	2
61	LSYK0551	ELECTRONIC VIEWFINDER UNIT (B)	2
61	LSYK0619	ELECTRONIC VIEWFINDER UNIT (C)	2
67	LSYK0526	CASSETTE COVER UNIT (A,AA)	3
67	LSYK0525	CASSETTE COVER UNIT (B)	3
67	LSYK0528	CASSETTE COVER UNIT (C,D,DA,E,EA,F,FA,G,GA,H,HA)	3
67	LSYK0529	CASSETTE COVER UNIT (I,IA,J,JA,K,KA,L,LA)	3
67	LSYK0527	CASSETTE COVER UNIT (M,MA)	3
74	VSQW0038	INFRARED REMOTE CONTROL UNIT (G,GA,I,IA,L,LA)	5
80	LSPG1085	ACCESSORY PACKING CASE,PAPER	5
81	LSJA0302	DC CABLE W/PLUG,DC6V	5
82	LSJA0283	AUDIO/VIDEO CABLE W/PLUG,0V	5

Ref. No.	Part No.	Part Name & Description	Remarks
83	LSPN0212	CUSHION,STYROFORM	5
84	VPFW0049	BAG,POLYETHYLENE	5
85	LSPG1018	PACKING CASE,PAPER (A,AA)	5
85	LSPG1017	PACKING CASE,PAPER (B)	5
85	LSPG1048	PACKING CASE,PAPER (C)	5
85	LSPG1011	PACKING CASE,PAPER (D,DA)	5
85	LSPG1060	PACKING CASE,PAPER (E,EA)	5
85	LSPG1056	PACKING CASE,PAPER (F,EA)	5
85	LSPG1059	PACKING CASE,PAPER (G,GA)	5
85	LSPG1012	PACKING CASE,PAPER (H,HA)	5
85	LSPG1013	PACKING CASE,PAPER (I,IA)	5
85	LSPG1057	PACKING CASE,PAPER (J,JA)	5
85	LSPG1055	PACKING CASE,PAPER (K,KA)	5
85	LSPG1058	PACKING CASE,PAPER (L,LA)	5
85	LSPG1016	PACKING CASE,PAPER (M,MA)	5
88	LSQF0355	FAN BAG (A,AA)	5
88	LSQF0360	FAN BAG (B)	5
88	LSQF0381	FAN BAG (C,D,DA,H,HA,I,IA)	5
88	LSQF0379	FAN BAG (E,EA,J,JA)	5
88	LSQF0377	FAN BAG (F,FA)	5
88	LSQF0380	FAN BAG (G,GA,L,LA)	5
88	LSQF0422	FAN BAG (K,KA)	5
88	LSQF0362	FAN BAG (M,MA)	5
92	LSFC0012	SHOULDER STRAP	5
93	VYMW0009	CASSETTE ADAPTOR	5
95	PV-A19-A	AC ADAPTOR UNIT	⚠5
100	VEQW0163	VCR OPERATION UNIT (B,C)	4
101	N9ZZ00000027	SECURITY TAG (C,D,DA)	2
102	LSQA0174A	SECURITY TAG SHEET (C,D,DA)	5
103	CPS-1C	CHECK POINT LABEL (A,AA,C)	5
106	LSGL0347	POWER LED PANEL	2
107	LSGT0049	EJECT KNOB	3
111	LSGU0177	DISPLAY BUTTON	3
114	LSDL0083	DUST COVER (B,C)	4
115	LSKM0536	SIDE CASE L,ABS RESIN (B,M,MA)	⚠2
115	LSKM0537	SIDE CASE L,ABS RESIN (C,D,DA,E,EA,F,FA,H,HA,J,JA,K,KA)	⚠2
115	LSKM0538	SIDE CASE L,ABS RESIN (G,GA,I,IA,L,LA)	⚠2
115	LSKM0560	SIDE CASE L,ABS RESIN (A,AA)	⚠2
117	LSMA0478	TRIPOD FRAME	2
118	LSMA0480	EVF PLATE,STEEL (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
118	LSMA0416	EVF PLATE,STEEL (B,C)	4
119	LSMA0476	EVF ANGLE	2
128	LSXM0010	MICROPHONE UNIT (A,AA,D,DA,E,EA,F,FA,H,HA,J,JA,K,KA)	3
128	LSXM0009	MICROPHONE UNIT (B,C,M,MA)	3
128	LSXM0011	MICROPHONE UNIT (G,GA,I,IA,L,LA)	3
129	ALP022AXX10	LIQUID CRYSTAL DISPLAY PANEL (A,D,E,F,G,H,I,J,K,L,M)	4
129	LCX032AKB-8	LIQUID CRYSTAL DISPLAY PANEL (AA,DA,EA,FA,GA,HA,IA,JA,KA,LA,MA)	4
130	LSEQ0553	TOP OPERATION UNIT (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	3
130	LSEQ0554	TOP OPERATION UNIT (B,C,M,MA)	3
131	LSEQ0595	SIDE L FLEXIBLE PRINTED CIRCUIT UNIT	2

Ref. No.	Part No.	Part Name & Description	Remarks
138	LSGU0174	TOP OPERATION BUTTON	3
148	LSKM0498	EVF CASE A,ABS RESIN (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	⚠4
148	LSKM0302	EVF CASE A,ABS RESIN (B)	⚠4
148	LSKM0613	EVF CASE A,ABS RESIN (C)	⚠4
148	LSKM0504	EVF CASE A,ABS RESIN (M,MA)	⚠4
149	LSKM0499	EVF CASE B,ABS RESIN (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	⚠4
149	LSKM0304	EVF CASE B,ABS RESIN (B)	⚠4
149	LSKM0614	EVF CASE B,ABS RESIN (C)	⚠4
149	LSKM0505	EVF CASE B,ABS RESIN (M,MA)	⚠4
151	LSKM0542	SIDE CASE R,ABS RESIN (A,AA)	⚠3
151	LSKM0541	SIDE CASE R,ABS RESIN (B)	⚠3
151	LSKM0548	SIDE CASE R,ABS RESIN (C,M,MA)	⚠3
151	LSKM0549	SIDE CASE R,ABS RESIN (D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	⚠3
161	LSQL1070	CAUTION LABEL (B,C)	4
163	LSSC0417	EVF ESD PLATE,STEEL (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
163	LSSC0324	EVF ESD PLATE,STEEL (B,C)	4
164	LSQL1019	CAUTION LABEL (B,C)	2
170	LSGU0175	EIS BUTTON	3
182	LSQL1020	LENS LABEL	2
183	LSMD0267	ARM HOLDER	2
184	LSSC0435	SENSOR SHIELD CASE,STEEL	2
185	VGLW0089	INFRARED PANEL (G,GA,I,IA,L,LA)	2
186	LSKM0265	COVER (B,C,M,MA)	3
186	VGFW0020	LIGHT PROTECTOR (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	3
187	LSMD0266	R HINGE	3
188	VMRW0025	LIGHT REFLECTOR (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	3
192	LSSC0444	LIGHT SHEET,AL (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	3
196	VQLW1735	EVF LABEL (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
203	LSXY0205	LAMP UNIT (C,D,DA,E,EA,F,FA,G,GA,H,HA,M,MA)	⚠3
203	LSXY0206	LAMP UNIT (I,IA,J,JA,K,KA,L,LA)	⚠3
206	LSMA0473	STRAP ANGLE A	3
209	LSMA0475	GRIP ANGLE	2
211	LSXY0244	LIQUID CRYSTAL DISPLAY PANEL UNIT (C,D,DA,E,EA,F,FA,G,GA)	3
211	LSXY0245	LIQUID CRYSTAL DISPLAY PANEL UNIT (H,HA,M,MA)	3
211	LSXY0246	LIQUID CRYSTAL DISPLAY PANEL UNIT (I,IA,J,JA,K,KA,L,LA)	3
212	LSXY0207	LEAD LIGHT PANEL UNIT (C,D,DA,E,EA,F,FA,G,GA,H,HA,M,MA)	3
212	LSXY0208	LEAD LIGHT PANEL UNIT (I,IA,J,JA,K,KA,L,LA)	3
213	LSXY0214	MECHANISM CHASSIS SUB ASS'Y	2
214	LSMZ0213	TAPE GUIDE	3
215	LSMZ0210	GUIDE COVER	3
216	LSMZ0214	PROTECTOR	3
219	LSYK0546	LENS HOOD UNIT (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	2
219	LSYK0545	LENS HOOD UNIT (B,M,MA)	2

Ref. No.	Part No.	Part Name & Description	Remarks
221	LSEM0030	ZOOM MOTOR UNIT	2
228	VMDW0357	BULGE CHIP (A,AA,B,C,D,DA,E,EA,G,GA,H,HA,I,IA,J,JA,L,LA,M,MA)	1
228	VMDW0374	BULGE CHIP (F,FA,K,KA)	1
229	LSMB0248	TAPE GUIDE SPRING	3
234	LSMT0045	LENS RUBBER	2
236	LSDL0132	PROTECT PLATE,PLASTIC (A,D,E,F,G,H,I,J,K,L,M)	4
236	LSDL0130	PROTECT PLATE,PLASTIC (AA,DA,EA,FA,GA,HA,IA,JA,KA,LA,MA)	4
241	LSFL0074	INFRARED CUT FILTER	2
242	LSDS0002	OPTICAL FILTER STOPPER	2
243	LSDL0131	REFLECTION PLATE,STEEL (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
244	LSMD0275	EVF PROTECT A (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
245	VDVW0003	CAPSTAN BELT	1
246	LSGU0179	VCR BUTTON (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
247	VJBW1626F	CYLINDER CABLE W/OUT PLUG,DC5V	1
248	VMFW0100	SHEET,NYLON-RAYON (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	3
249	LSFL0073	LED DIFFUSION PLATE,STEEL (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
250	LSQL1018	LIGHT CAUTION LABEL (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	⚠2
251	LSMD0289	EVF LCD HOLDER (A,D,E,F,G,H,I,J,K,L,M)	4
251	LSMD0277	EVF LCD HOLDER (AA,DA,EA,FA,GA,HA,IA,JA,KA,LA,MA)	4
268	LSYK0238	EYE CAP UNIT (B,C)	4
268	LSYK0548	EYE CAP UNIT (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
273	VXYW0195	REDUCTION GEAR UNIT	1
274	VDGW0063	REDUCTION GEAR A	1
275	VDGW0064	REDUCTION GEAR B	1
277	VXYW0194	MAIN CAM UNIT	1
286	LSGT0052	LIGHT KNOB (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	3
290	LSSC0413	ESD PLATE,STEEL	2
295	LSMB0247	SHUTTER SPRING	3
297	LSMD0273	LENS PIECE	2
300	VMDW0494	OPENER	1
301	LSML0126	ARM	2
307	LSSC0329	LENS ESD PLATE,STEEL	2
309	VMDW0486	PINCH TAPE GUIDE	1
310	VXJW0095	IMPEDANCE ROLLER UNIT	1
312	VEHS0588	AUDIO CONTROL HEAD UNIT	1
313	VMLW0083	PINCH TOGGLE	1
314	VXLW0081	P5 ARM UNIT	1
316	VXLS1125	REV BRAKE ARM UNIT	1
320	LSYK0549	MICROPHONE CASE UNIT	3
321	LSKF0333	WING	3
335	LSKM0497	LCD CASE B,ABS RESIN (C,D,DA,E,EA,F,FA,G,GA)	⚠3
335	LSKM0496	LCD CASE B,ABS RESIN (H,HA,M,MA)	⚠3
335	LSKM0493	LCD CASE B,ABS RESIN (I,IA,J,JA,K,KA,L,LA)	⚠3
340	VULS0001	LAMP KIT (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	⚠3
341	LSFL0072	LED LENS (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4

Ref. No.	Part No.	Part Name & Description	Remarks
342	LSMD0276	EVF PROTECT B (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
343	LSSC0418	OPERATION PLATE,STEEL (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
344	LSEK0396	EVF CONNECTOR (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
345	LSMF0057	SHEET,NYLON-RAYON (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	2,3
346	LSMD0280	P.C.B. HOLDER (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	4
347	VMFS0134	SHEET,NYLON-RAYON (B,C)	4
348	LSJW0020	FLEXIBLE FLAT CABLE W/OUT PLUG, DC13V, DC-15V (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	3
349	LSEQ0540	MECHANISM FLEXIBLE PRINTED CIRCUIT UNIT	1
350	LSMZ0295	SPACER (AA,DA,EA,FA,GA,HA,IA,JA,KA,LA,MA)	4
355	LSYK0505	LCD CASE A UNIT,ABS RESIN (C,D,DA,E,EA,G,GA,H,HA)	3
355	LSYK0623	LCD CASE A UNIT,ABS RESIN (F,FA)	3
355	LSYK0506	LCD CASE A UNIT,ABS RESIN (I,IA,J,JA,L,LA)	3
355	LSYK0628	LCD CASE A UNIT,ABS RESIN (K,KA)	3
355	LSYK0504	LCD CASE A UNIT,ABS RESIN (M,MA)	3
365	LSMP0262	CASSETTE FRAME (C,D,DA,E,EA,F,FA,G,GA,H,HA,M,MA)	3
365	LSMP0263	CASSETTE FRAME (I,IA,J,JA,K,KA,L,LA)	3
366	LSXA0332	LCD SHAFT UNIT (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	3
366	LSXA0331	LCD SHAFT UNIT (M,MA)	3
371	LSSA0002	EARTH CONTACT	1
372	LSMB0168	CONTACT SPRING	1
373	LSMA0336	CONTACT PLATE,STEINLESS	1
374	LSKM0300	EVF PIECE (B)	4
374	LSKM0618	EVF PIECE (C)	4
375	VDGW0059	MOTOR GEAR	1
407	XQN16+A32	SCREW,STEEL	1
408	VHDW0124	SCREW W/WASHER,STEEL	1
409	VMXW0217	CUT WASHER,STEEL	1
410	XWGV15Z32G	POLY SLIDER WASHER	1
411	VMXW0213	CUT WASHER,STEEL	1
412	XQN2+B35	SCREW,STEEL	1
413	XQN2+A22	SCREW,STEEL	1
414	XQN14+A32	SCREW,STEEL	1
415	XQN2+B22	SCREW,STEEL	1
416	XQN14+BJ25FZ	SCREW,STEEL	1
417	XQN2+B2	SCREW,STEEL	1
419	VMX2026	CUT WASHER,STEEL	1
421	XQN16+BF4FN	SCREW,STEEL	2
423	XQN16+B3FN	SCREW,STEEL	1
469	XQN2+BF4FXK	SCREW,STEEL (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	3
472	VHDW0102	SCREW,STEEL	3
473	VHDW0100	SCREW,STEEL	2
482	XQN2+CJ12FXK	SCREW,STEEL	4
483	XQN2+BJ4FXK	SCREW,STEEL	2,4
501	XQN16+CJ5FY	SCREW,STEEL	2
502	XQN16+CJ6	SCREW,STEEL	2
504	XQN2+CF3	SCREW,STEEL	2
533	XQN2+BF5FXK	SCREW,STEEL	2,3

Ref. No.	Part No.	Part Name & Description	Remarks
586	XQN2+BJ5FXK	SCREW,STEEL	2,3
604	XQN2+BJ8FXK	SCREW,STEEL	3
617	XQN2+BJ10FXK	SCREW,STEEL	3
628	XQN16+B3FU	SCREW,STEEL	1
630	VMXW0175	WASHER,PLASTIC	2
632	XQN14+B3	SCREW,STEEL	1
635	XQN16+C5FU	SCREW,STEEL	1
637	XQN2+CF10FU	SCREW,STEEL	2
640	LSHD0054	SCREW,STEEL	1
642	LSHD0071	SCREW,STEEL	2
643	LSMC0103	SPRING WASHER,STAINLESS	2
701	VEKW1639	CRT SOCKET UNIT (B,C)	4
703	ELY05V583C	DEFLECTION YOKE (B,C)	⚠4
704	M01LSX07WB01	CRT (B,C)	⚠4
705	LSEK0375	CONNECTOR CABLE W/PLUG,DC5V (B,C)	4
706	VMZW0668	INSULATION SHEET,PLASTIC (H,HA,M,MA)	3
E10	LSEP8069G1	MAIN C.B.A. (A,AA)	1 RTL
E10	LSEP8069F1	MAIN C.B.A. (B)	1 RTL
E10	LSEP8069H1	MAIN C.B.A. (C)	1 RTL
E10	LSEP8069A1	MAIN C.B.A. (D,DA)	1 RTL
E10	LSEP8069L1	MAIN C.B.A. (E,EA)	1 RTL
E10	LSEP8069J1	MAIN C.B.A. (F,FA)	1 RTL
E10	LSEP8069N1	MAIN C.B.A. (G,GA)	1 RTL
E10	LSEP8069B1	MAIN C.B.A. (H,HA)	1 RTL
E10	LSEP8069C1	MAIN C.B.A. (I,IA)	1 RTL
E10	LSEP8069M1	MAIN C.B.A. (J,JA)	1 RTL
E10	LSEP8069K1	MAIN C.B.A. (K,KA)	1 RTL
E10	LSEP8069P1	MAIN C.B.A. (L,LA)	1 RTL
E10	LSEP8069E1	MAIN C.B.A. (M,MA)	1 RTL
E20	LSEQ0598	ELECTRONIC VIEWFINDER C.B.A. (B,C)	4 RTL
E30	LSEP8113A1	COLOR ELECTRONIC VIEWFINDER C.B.A. (A,D,E,F,G,H,I,J,K,L,M)	4 RTL
E30	LSEP8077A1	COLOR ELECTRONIC VIEWFINDER C.B.A. (AA,DA,EA,FA,GA,HA,IA,JA,KA,LA,MA)	4 RTL
E40	LSEP8073A1	LIQUID CRYSTAL DISPLAY C.B.A. (C,D,DA,E,EA,F,FA,G,GA)	3 RTL
E40	LSEP8073B1	LIQUID CRYSTAL DISPLAY C.B.A. (H,HA,M,MA)	3 RTL
E40	LSEP8074A1	LIQUID CRYSTAL DISPLAY C.B.A. (I,IA,J,JA,K,KA,L,LA)	3 RTL
E50	LSEP8075A1	RELAY C.B.A. (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	3 RTL
E60	LSEQ0609	CCD C.B.A. NR	2

SERVICE FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	VFKS002	LIGHT BOX W/CHARTS SET	
	VFKS002A	GLAY SCALE CHART	
	VFKS002B	COLOR BAR CHART	
	VFKS002C	REGISTRATION CHART	
	VFKS002D	RESOLUTION CHART	
	VFKS002Y	LIGHT BOX	
	VFKS003-N	REFLECTION CHART SET	
	VFKS003A	GLAY SCALE CHART	
	VFKS003B	COLOR BAR CHART	
	VFKS003C	REGISTRATION CHART	
	VFKS003D	RESOLUTION CHART	
	VFK1164TFWC2	WHITE CHART	VED
	VFK1164TFGS2	GRAY SCALE CHART	VED
	VFK1164TFCB2	COLOR BAR CHART	VED
	VFK1164TFCT2	CONVERSION FILTER (C-14)	VED
	VFK1164LBX1	LIGHT BOX	VED
	VFK1164TCM02	INFINITY LENS (WITH FOCUS CHART)	VED
	VFK1164TLA01	LAMP	VED
	VFK1164TAR58	ATTACHMENT RING (58mm)	VED
	VFK1164TAR55	ATTACHMENT RING (55mm)	VED
	VFK1164TAR52	ATTACHMENT RING (52mm)	VED
	VFK1164TAR49	ATTACHMENT RING (49mm)	VED
	VFK1164TAR46	ATTACHMENT RING (46mm)	VED
	VFK1164TAR43	ATTACHMENT RING (43mm)	VED
	VFK1164TAR37	ATTACHMENT RING (37mm)	VED
	VFK1164TAR3A	ATTACHMENT RING (30.5mm)	VED
	VFK1164TAR27	ATTACHMENT RING (27mm)	VED
	VFMS0004H6C	VHS-C ALIGNMENT TAPE	
	VFMW0001C	VHS-C ALIGNMENT TAPE	
	VFK27	HEAD CLEANING STICK	
	VFKS0081	GREASE	
	LSUQ0002	GREASE	
	VFK1024	MOLYTONE GREASE	
	VUVS0007	EXTENSION CABLE 12P	
	LSUA0020	EXTENSION CABLE 20P	
	VUVS0012	EXTENSION CABLE 22P	
	VUVS0015	EXTENSION CABLE 28P	
	LSUP0005A	TP ADJUSTMENT CABLE 40P	
	VFKW0123B	TP ADJUSTMENT PCB 40P	
	LSUP0005C	TP CLIP 36P	
	VFKW0066	A.W.B. ADJUSTMENT FIXTURE	
	VFKW0116	COLOR CHIP CHART	
	VFKW1000	CAAS KIT	
	VFKW1000A	INTERFACE BOX	
	VFKW1000B	CAMERA CONNECTING CABLE	
	VFKW1000C	9PIN RS-232C CABLE	
	VFKW1000D	25PIN RS-232C CABLE	
	VHDW0125	LOCK SCREW	

13.3. ELECTRICAL REPLACEMENT PARTS LIST

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E10	LSEP8069G1	MAIN C.B.A. (A,AA)	E.S.D. RTL
E10	LSEP8069F1	MAIN C.B.A. (B)	E.S.D. RTL
E10	LSEP8069H1	MAIN C.B.A. (C)	E.S.D. RTL
E10	LSEP8069A1	MAIN C.B.A. (D,DA)	E.S.D. RTL
E10	LSEP8069L1	MAIN C.B.A. (E,EA)	E.S.D. RTL
E10	LSEP8069J1	MAIN C.B.A. (F,FA)	E.S.D. RTL
E10	LSEP8069N1	MAIN C.B.A. (G,GA)	E.S.D. RTL
E10	LSEP8069B1	MAIN C.B.A. (H,HA)	E.S.D. RTL
E10	LSEP8069C1	MAIN C.B.A. (I,IA)	E.S.D. RTL
E10	LSEP8069M1	MAIN C.B.A. (J,JA)	E.S.D. RTL
E10	LSEP8069K1	MAIN C.B.A. (K,KA)	E.S.D. RTL
E10	LSEP8069P1	MAIN C.B.A. (L,LA)	E.S.D. RTL
E10	LSEP8069E1	MAIN C.B.A. (M,MA)	E.S.D. RTL
E20	LSEQ0598	ELECTRONIC VIEEWFINDER C.B.A. (B,C)	RTL
E30	LSEP8113A1	COLOR ELECTRONIC VIEWFINDER C.B.A. (A,D,E,F,G,H,I,J,K,L,M)	E.S.D. RTL
E30	LSEP8077A1	COLOR ELECTRONIC VIEWFINDER C.B.A. (AA,DA,EA,FA,GA,HA,IA,JA,KA,LA,MA)	RTL
E40	LSEP8073A1	LIQUID CRYSTAL DISPLAY C.B.A. (C,D,DA,E,EA,F,FA,G,GA)	RTL
E40	LSEP8073B1	LIQUID CRYSTAL DISPLAY C.B.A. (H,HA,M,MA)	RTL
E40	LSEP8074A1	LIQUID CRYSTAL DISPLAY C.B.A. (I,IA,J,JA,K,KA,L,LA)	RTL
E50	LSEP8075A1	RELAY C.B.A. (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	RTL
E60	LSEQ0609	CCD C.B.A. NR	E.S.D.

13.3.1. MAIN C.B.A.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC301	MN67324	IC, LOGIC	E.S.D.
IC306	BR9040FV-DE2	IC, 4K EEP ROM	E.S.D.
IC308	HD2224TE2	IC, 16BIT MICROCONTROLLER	E.S.D.
IC309	BA10324AFVE1	IC, LINEAR	
IC602	MN5293-1	IC, CMOS GATE ARRAYS	E.S.D.
IC603	MN3112SA-E1	IC, CMOS STANDARD LOGIC	E.S.D.
IC605	AN2109NFHQ	IC, LINEAR	
IC701	LB1837MLTEL3	IC, LINEAR	
IC701	LB1837M-TE-L	IC, LINEAR	
IC701	LB1837MTEL3	IC, LINEAR	
IC702	LB1837MLTEL3	IC, LINEAR	
IC702	LB1837M-TE-L	IC, LINEAR	
IC702	LB1837MTEL3	IC, LINEAR	
IC1001	BA9737KV	IC, LINEAR	
IC2001	AN3897FH-V	IC, LINEAR	
IC2002	UN224-TX	IC, LINEAR	
IC2003	UN224-TX	IC, LINEAR	
IC3001	AN2401NFH	IC, LINEAR	
IC3002	MN38663S-E1	IC, LOGIC	E.S.D.
IC4001	BA7757BK	IC, LINEAR	
IC6001	MN101D02FWA1	IC, 8BIT MICROCONTROLLER	E.S.D.
IC6002	PST3439UR	IC, CMOS STANDARD LOGIC	E.S.D.
IC6002	R3111Q391ATR	IC, LINEAR	
IC6002	S80839ANNPT2	IC, LINEAR	
IC6002	XC61CN3902NR	IC, LINEAR	
IC6005	S3510AEFJTB	IC, PERIPHERAL MCU	E.S.D.
IC6006	XC62FP4502PR	IC, PERIPHERAL MCU	E.S.D.
IC6007	BA6417F-E2	IC, LINEAR	
IC6203	CNB10010RL	TAKEUP REEL SENSOR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q301	2SD1819A	TRANSISTOR SI NPN CHIP	
Q301	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q302	2SC4215-0TL	TRANSISTOR SI NPN CHIP	
Q302	2SC4215-YTL	TRANSISTOR SI NPN CHIP	
Q303	2SB1218A	TRANSISTOR SI PNP CHIP	
Q303	2SA1576A106R	TRANSISTOR SI PNP CHIP	
Q305	2SD1819A	TRANSISTOR SI NPN CHIP	
Q305	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q306	2SD1819A	TRANSISTOR SI NPN CHIP	
Q306	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q307	2SD1819A	TRANSISTOR SI NPN CHIP	
Q307	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q310	2SD1819A	TRANSISTOR SI NPN CHIP	
Q310	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q311	2SD1819A	TRANSISTOR SI NPN CHIP	
Q311	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q617	UN5215	TRANSISTOR SI NPN CHIP	
Q617	DTC114TUA106	TRANSISTOR SI NPN CHIP	
Q703	UN5211	TRANSISTOR SI NPN CHIP	
Q703	DTC114EUA106	TRANSISTOR SI NPN CHIP	
Q1001	UN5111	TRANSISTOR SI PNP CHIP	
Q1001	DTA114EUA106	TRANSISTOR SI PNP CHIP	
Q1002	UN5113	TRANSISTOR SI PNP CHIP	
Q1002	DTA144EUA106	TRANSISTOR SI PNP CHIP	
Q1003	UN5115	TRANSISTOR SI PNP CHIP	
Q1003	DTA114TUA106	TRANSISTOR SI PNP CHIP	
Q1005	2SB1628-T1ZX	TRANSISTOR SI PNP CHIP	
Q1005	2SB1628-T1ZY	TRANSISTOR SI PNP CHIP	
Q1006	MPL1-TL	TRANSISTOR SI PNP CHIP	
Q1007	2SB1424T100Q	TRANSISTOR SI PNP CHIP	
Q1007	2SB1424T100P	TRANSISTOR SI PNP CHIP	
Q1008	MPL1-TL	TRANSISTOR SI PNP CHIP (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
Q1009	MPL1-TL	TRANSISTOR SI PNP CHIP	
Q1010	2SB1218A	TRANSISTOR SI PNP CHIP	
Q1010	2SA1576A106R	TRANSISTOR SI PNP CHIP	
Q1011	XP4501	TRANSISTOR COMPLEX COMPONENT SI NPN/PNP CHIP	
Q1011	HN1C01FU-GTR	TRANSISTOR COMPLEX COMPONENT SI NPN/PNP CHIP	
Q1011	HN1C01FU-YTR	TRANSISTOR COMPLEX COMPONENT SI NPN/PNP CHIP	
Q1011	UMX1NTR	TRANSISTOR SI PNP CHIP	
Q1013	2SA204600L	TRANSISTOR SI PNP CHIP	
Q1013	CPH3115	TRANSISTOR SI PNP CHIP	
Q1015	2SD2351T106V	TRANSISTOR SI NPN CHIP	
Q1015	2SD2351T106W	TRANSISTOR SI NPN CHIP	
Q1016	2SD1819A	TRANSISTOR SI NPN CHIP (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
Q1016	2SC4081T106R	TRANSISTOR SI NPN CHIP (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
Q1017	2SD1819A	TRANSISTOR SI NPN CHIP (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
Q1017	2SC4081T106R	TRANSISTOR SI NPN CHIP (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
Q1018	2SB1218A	TRANSISTOR SI PNP CHIP	
Q1018	2SA1576A106R	TRANSISTOR SI PNP CHIP	
Q1019	2SB1218A	TRANSISTOR SI PNP CHIP	

Ref. No.	Part No.	Part Name & Description	Remarks
Q1019	2SA1576A106R	TRANSISTOR SI PNP CHIP	
Q1020	2SA201000L	TRANSISTOR SI PNP CHIP (C)	
Q1020	CPH3106	TRANSISTOR SI PNP CHIP (C)	
Q1021	UN5212	TRANSISTOR SI NPN CHIP (C)	
Q1021	DTC124EUA106	TRANSISTOR SI NPN CHIP (C)	
Q1024	2SD1819A	TRANSISTOR SI NPN CHIP	
Q1024	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q1101	2SA2011-TD	TRANSISTOR SI PNP CHIP (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
Q1102	2SD1819A	TRANSISTOR SI NPN CHIP (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
Q1102	2SC4081T106R	TRANSISTOR SI NPN CHIP (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
Q1103	2SB1218A	TRANSISTOR SI PNP CHIP (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
Q1103	2SA1576A106R	TRANSISTOR SI PNP CHIP (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
Q1105	2SB1218A	TRANSISTOR SI PNP CHIP (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
Q1105	2SA1576A106R	TRANSISTOR SI PNP CHIP (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
Q3003	2SB1218A	TRANSISTOR SI PNP CHIP	
Q3003	2SA1576A106R	TRANSISTOR SI PNP CHIP	
Q3004	2SC4215-0TL	TRANSISTOR SI NPN CHIP	
Q3004	2SC4215-YTL	TRANSISTOR SI NPN CHIP	
Q3005	2SD1819A	TRANSISTOR SI NPN CHIP	
Q3005	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q3027	2SD1819A	TRANSISTOR SI NPN CHIP	
Q3027	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q4002	XP4601	TRANSISTOR COMPLEX COMPONENT SI NPN/PNP CHIP	
Q4002	HN1B04FU-GTR	TRANSISTOR COMPLEX COMPONENT SI NPN/PNP CHIP	
Q4002	HN1B04FU-YTR	TRANSISTOR COMPLEX COMPONENT SI NPN/PNP CHIP	
Q4002	UMZ1NTR	TRANSISTOR SI NPN CHIP	
Q4003	2SD1819A	TRANSISTOR SI NPN CHIP	
Q4003	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q4004	2SD1819A	TRANSISTOR SI NPN CHIP	
Q4004	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q4008	2SD602(R)	TRANSISTOR SI NPN CHIP	
Q4008	2SD2432(R)	TRANSISTOR SI NPN CHIP	
Q4008	2SD602A-RTX	TRANSISTOR SI NPN CHIP	
Q4009	2SD1819A	TRANSISTOR SI NPN CHIP	
Q4009	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q4010	2SB970	TRANSISTOR SI PNP CHIP	
Q4010	2SB1585	TRANSISTOR SI PNP CHIP	
Q4011	2SD1819A	TRANSISTOR SI NPN CHIP	
Q4011	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q6004	2SB1218A	TRANSISTOR SI PNP CHIP	
Q6004	2SA1576A106R	TRANSISTOR SI PNP CHIP	
Q6006	2SB1218A	TRANSISTOR SI PNP CHIP (G,GA,I,IA,L,LA)	
Q6006	2SA1576A106R	TRANSISTOR SI PNP CHIP (G,GA,I,IA,L,LA)	
Q6008	UN5217	TRANSISTOR SI NPN CHIP	
Q6008	DTC124TUA106	TRANSISTOR SI NPN CHIP	
Q6010	UN5212	TRANSISTOR SI NPN CHIP	
Q6010	DTC124EUA106	TRANSISTOR SI NPN CHIP	
Q6012	2SD2351T106V	TRANSISTOR SI NPN CHIP	

Ref. No.	Part No.	Part Name & Description	Remarks
Q6012	2SD2351T106W	TRANSISTOR SI NPN CHIP	
Q6013	2SD601A	TRANSISTOR SI NPN CHIP	
Q6013	2SC2412K146R	TRANSISTOR SI NPN CHIP	
Q6021	2SB1218A	TRANSISTOR SI PNP CHIP	
Q6021	2SA1576A106R	TRANSISTOR SI PNP CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D701	MA111	DIODE SI CHIP	
D701	1SS355TE-17	DIODE SI CHIP	
D1004	EP10QY03TE8L	DIODE SI CHIP	
D1005	MA111	DIODE SI CHIP	
D1005	1SS355TE-17	DIODE SI CHIP	
D1007	MA111	DIODE SI CHIP	
D1007	1SS355TE-17	DIODE SI CHIP	
D1008	MA111	DIODE SI CHIP	
D1008	1SS355TE-17	DIODE SI CHIP	
D1011	MA8110-L	DIODE ZENER CHIP 11V (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
D1012	MA8068-HTX	DIODE	
D1101	RD12S-T1B	DIODE ZENER CHIP 12V (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
D1102	MA111	DIODE SI CHIP (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
D1102	1SS355TE-17	DIODE SI CHIP (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
D4002	MA3120WA	DIODE ZENER	
D6001	MA142WK	DIODE SI CHIP	
D6001	DAN202UT106	DIODE CHIP	
D6019	MA111	DIODE SI CHIP	
D6019	1SS355TE-17	DIODE SI CHIP	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R301	ERJ3GEYJ122V	MGF CHIP 1/16W 1.2K	
R302	VRJSD3D6800	MGF CHIP 1/16W 680	
R303	ERJ3GEYG102V	MGF CHIP 1/16W 1K	
R304	VRJSD3D2201	MGF CHIP 1/16W 2.2K	
R305	VRJSD3D2201	MGF CHIP 1/16W 2.2K	
R306	ERJ3GEYJ391V	MGF CHIP 1/16W 390	
R307	ERJ3GEYG103V	MGF CHIP 1/16W 10K	
R308	ERJ3GEYG391V	MGF CHIP 1/16W 390	
R309	ERJ3GEYG102V	MGF CHIP 1/16W 1K	
R310	ERJ3GEYG102V	MGF CHIP 1/16W 1K	
R311	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R312	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R313	ERJ3GEYJ4R7V	MGF CHIP 1/16W 4.7	
R314	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R315	ERJ3GEYG181V	MGF CHIP 1/16W 180	
R316	ERJ3GEYJ121V	MGF CHIP 1/16W 120	
R317	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R318	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R319	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R320	ERJ3GEYJ561X	MGF CHIP 1/16W 560	
R321	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R322	ERJ3GEYJ272X	MGF CHIP 1/16W 2.7K	
R323	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R324	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R325	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R328	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R333	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R336	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R340	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R342	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R343	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R344	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R345	ERJ3GEYJ104X	MGF CHIP 1/16W 100K	
R346	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R347	ERJ3GEYJ123X	MGF CHIP 1/16W 12K	
R348	ERJ3GEYJ104X	MGF CHIP 1/16W 100K	
R349	ERJ3GEYJ563V	MGF CHIP 1/16W 56K	
R350	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R351	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R352	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R353	ERJ3GEYJ562X	MGF CHIP 1/16W 5.6K	
R355	ERJ3GEYJ334V	MGF CHIP 1/16W 330K	
R356	ERJ3GEYJ394V	MGF CHIP 1/16W 390K	
R357	ERJ3GEYJ474V	MGF CHIP 1/16W 470K	
R358	ERJ3GEYJ123X	MGF CHIP 1/16W 12K	
R359	ERJ3GEYJ123X	MGF CHIP 1/16W 12K	
R360	ERJ3GEYJ331X	MGF CHIP 1/16W 330	
R361	ERJ3GEYJ103X	MGF CHIP 1/10W 10K	
R362	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R363	ERJ3GEYJ123X	MGF CHIP 1/16W 12K	
R364	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R365	ERJ3GEYK395V	MGF CHIP 1/16W 3.9M	
R366	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R367	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	

Ref. No.	Part No.	Part Name & Description	Remarks
R368	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R369	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R370	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R372	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R373	ERJ3GEYJ303V	MGF CHIP 1/16W 30K	
R374	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R375	ERJ3GEYJ333X	MGF CHIP 1/16W 33K	
R376	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R377	ERJ3GEYJ333X	MGF CHIP 1/16W 33K	
R378	ERJ3GEYJ333X	MGF CHIP 1/16W 33K	
R379	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R380	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R381	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R382	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R383	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R384	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R385	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R386	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R387	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R388	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R389	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R390	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R391	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R393	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R394	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R395	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R399	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R400	ERJ3GEYJ331X	MGF CHIP 1/16W 330	
R402	ERJ3GEYG472V	MGF CHIP 1/16W 4.7K	
R427	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R431	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R432	ERJ3GEYJ104X	MGF CHIP 1/16W 100K	
R436	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R603	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R605	ERJ3GEYJ331X	MGF CHIP 1/16W 330	
R608	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R609	ERJ3GEYJ681X	MGF CHIP 1/16W 680	
R613	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R615	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R616	ERJ3GEYJ105V	MGF CHIP 1/16W 1M	
R617	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R618	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R619	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R620	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R623	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R625	ERJ3GEYJ103X	MGF CHIP 1/10W 10K	
R639	ERJ3GEYJ105V	MGF CHIP 1/16W 1M	
R641	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R643	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R644	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R645	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R646	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R651	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R652	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	

Ref. No.	Part No.	Part Name & Description	Remarks
R653	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R655	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R659	ERJ3GEYJ562X	MGF CHIP 1/16W 5.6K	
R662	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R680	ERJ3GEYJ331X	MGF CHIP 1/16W 330	
R683	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R686	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R705	ERJ3GEYJ103X	MGF CHIP 1/10W 10K	
R706	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R707	ERJ8GEYJ101V	MGF CHIP 1/4W 0.1	
R708	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R709	ERJ3GEYJ103X	MGF CHIP 1/10W 10K	
R712	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R713	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R714	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R715	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R718	ERJ3GEYJ562X	MGF CHIP 1/16W 5.6K	
R719	ERJ3GEYJ183X	MGF CHIP 1/16W 18K	
R720	ERJ3GEYJ114V	MGF CHIP 1/16W 110K	
R721	ERJ3GEYJ183X	MGF CHIP 1/16W 18K	
R722	ERJ3GEYJ114V	MGF CHIP 1/16W 110K	
R723	ERJ3GEYJ363V	MGF CHIP 1/16W 36K	
R724	ERJ3GEYJ363V	MGF CHIP 1/16W 36K	
R726	ERJ3GEYJ562X	MGF CHIP 1/16W 5.6K	
R730	ERJ3GEYJ562X	MGF CHIP 1/16W 5.6K	
R732	ERJ3GEYJ562X	MGF CHIP 1/16W 5.6K	
R735	ERJ3GEYJ363V	MGF CHIP 1/16W 36K	
R736	ERJ3GEYJ363V	MGF CHIP 1/16W 36K	
R737	ERJ3GEYJ114V	MGF CHIP 1/16W 110K	
R738	ERJ3GEYJ183X	MGF CHIP 1/16W 18K	
R739	ERJ3GEYJ114V	MGF CHIP 1/16W 110K	
R740	ERJ3GEYJ183X	MGF CHIP 1/16W 18K	
R744	ERJ8GEYJ3R9V	MGF CHIP 1/8W 3.9	
R745	ERJ8GEYJ3R9V	MGF CHIP 1/8W 3.9	
R746	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R747	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R748	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R749	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R750	ERJ3GEYJ105V	MGF CHIP 1/16W 1M	
R751	ERJ3GEYJ105V	MGF CHIP 1/16W 1M	
R1003	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R1004	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R1006	ERJ3GEYJ224V	MGF CHIP 1/16W 220K	
R1007	ERJ3GEYJ224V	MGF CHIP 1/16W 220K	
R1009	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R1010	ERJ3GEY0R00X	MGF CHIP 1/16W 0 (A,AA,B)	
R1011	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R1012	VRJSD3D3902	MGF CHIP 1/16W 39K	
R1013	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R1014	ERJ3GEY0R00X	MGF CHIP 1/16W 0 (A,AA,B)	
R1016	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R1017	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R1019	ERJ3GEYJ224V	MGF CHIP 1/16W 220K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	

Ref. No.	Part No.	Part Name & Description	Remarks
R1020	ERJ3GEYJ471X	MGF CHIP 1/16W 470	
R1021	ERJ3GEYJ471X	MGF CHIP 1/16W 470	
R1022	ERJ3GEYJ562X	MGF CHIP 1/16W 5.6K	
R1023	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R1026	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R1027	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R1028	ERJ3GEYJ471X	MGF CHIP 1/16W 470	
R1029	ERJ3GEYJ102X	MGF CHIP 1/16W 1K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1030	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1031	VRJSD3D2002V	MGF CHIP 1/16W 20K	
R1032	VRJSD3D1500V	MGF CHIP 1/16W 150	
R1033	VRJSD3D1002	MGF CHIP 1/16W 10K	
R1034	VRJSD3D3601V	MGF CHIP 1/16W 3600	
R1035	VRJSD3D39R0V	MGF CHIP 1/16W 39	
R1036	VRJSD3D2701	MGF CHIP 1/16W 2.7K	
R1037	VRJSD3D2702	MGF CHIP 1/16W 27K	
R1038	VRJSD3D39R0V	MGF CHIP 1/16W 39	
R1039	VRJSD3D3001	MGF CHIP 1/16W 3K	
R1040	VRJSD3D6201V	MGF CHIP 1/16W 6.2K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1041	VRJSD3D39R0V	MGF CHIP 1/16W 39 (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1043	VRJSD3D3001	MGF CHIP 1/16W 3K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1044	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R1045	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R1046	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R1047	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R1056	ERJ3GEYJ223X	MGF CHIP 1/16W 22K (C)	
R1057	ERJ3GEY0R00X	MGF CHIP 1/16W 0 (B)	
R1058	ERJ3GEY0R00X	MGF CHIP 1/16W 0 (C)	
R1059	ERJ3GEYJ681X	MGF CHIP 1/16W 680 (C)	
R1060	ERJ3GEYJ821X	MGF CHIP 1/16W 820	
R1062	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R1064	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R1065	ERJ3GEYJ821X	MGF CHIP 1/16W 820	
R1067	VRJSD3D3901	MGF CHIP 1/16W 3.9K	
R1068	VRJSD3D1801	MGF CHIP 1/16W 1.8K	
R1069	VRJSD3D33R0	MGF CHIP 1/16W 33	
R1070	ERJ3GEY0R00X	MGF CHIP 1/16W 0 (B,C,M,MA)	
R1071	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R1072	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R1073	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R1074	ERJ3GEYJ473X	MGF CHIP 1/16W 47K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1081	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1082	ERJ3GEYJ103X	MGF CHIP 1/10W 10K (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1083	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1084	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R1085	ERJ3GEYJ392X	MGF CHIP 1/16W 3.9K	

Ref. No.	Part No.	Part Name & Description	Remarks
R1086	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R1087	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R1088	ERJ3GEY0R00X	MGF CHIP 1/16W 0 (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1101	ERJ8GEYJR56V	MGF CHIP 1/4W 0.56 (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
R1102	ERJ8GEYJR56V	MGF CHIP 1/4W 0.56 (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
R1103	ERJ3GEYJ223X	MGF CHIP 1/16W 22K (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
R1104	ERJ3GEYJ560V	MGF CHIP 1/10W 56 (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
R1105	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
R1106	ERJ3GEYJ561X	MGF CHIP 1/16W 560 (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
R1107	ERJ3GEYJ562X	MGF CHIP 1/16W 5.6K (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
R1108	ERJ3GEYJ473X	MGF CHIP 1/16W 47K (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
R1109	ERJ3GEYJ473X	MGF CHIP 1/16W 47K (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
R1110	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R1111	ERJ3GEYJ223X	MGF CHIP 1/16W 22K (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
R1601	ERJ3GEYJ101X	MGF CHIP 1/16W 100 (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1602	ERJ3GEYJ101X	MGF CHIP 1/16W 100 (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1603	ERJ3GEYJ101X	MGF CHIP 1/16W 100 (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1604	ERJ3GEYJ101X	MGF CHIP 1/16W 100 (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1605	ERJ3GEYJ101X	MGF CHIP 1/16W 100 (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R1606	ERJ3GEYJ101X	MGF CHIP 1/16W 100 (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R2001	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R2003	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R2004	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R2008	ERJ8GEYJR33V	MGF CHIP 1/8W 0.33	
R2010	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R2011	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R2012	ERJ3GEYJ184V	MGF CHIP 1/16W 180K	
R2013	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R2014	ERJ3GEYJ684V	MGF CHIP 1/16W 680K	
R2015	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R2016	ERJ3GEYJ684V	MGF CHIP 1/16W 680K	
R2021	ERJ3GEYJ103X	MGF CHIP 1/10W 10K	
R2022	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R2023	ERJ8GEYJR33V	MGF CHIP 1/8W 0.33	
R2025	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R2026	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R2027	ERJ3GEYJ471X	MGF CHIP 1/16W 470	
R2028	ERJ3GEYJ391V	MGF CHIP 1/16W 390	
R2029	ERJ3GEYJ391V	MGF CHIP 1/16W 390	
R2030	ERJ3GEYJ471X	MGF CHIP 1/16W 470	

Ref. No.	Part No.	Part Name & Description	Remarks
R2031	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R2032	ERJ3GEYJ103X	MGF CHIP 1/10W 10K	
R3002	ERJ3GEYJ154V	MGF CHIP 1/16W 150K	
R3003	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R3004	ERJ3GEYJ270V	MGF CHIP 1/16W 27	
R3005	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R3006	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R3008	ERJ3GEYJ122V	MGF CHIP 1/16W 1.2K	
R3009	ERJ3GEYJ392X	MGF CHIP 1/16W 3.9K	
R3010	ERJ3GEYJ122V	MGF CHIP 1/16W 1.2K	
R3011	ERJ3GEYJ271V	MGF CHIP 1/16W 270	
R3015	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R3016	ERJ3GEYJ821X	MGF CHIP 1/16W 820	
R3017	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R3018	ERJ3GEYJ471X	MGF CHIP 1/16W 470	
R3022	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R3023	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R3024	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3025	ERJ3GEYJ101X	MGF CHIP 1/16W 100 (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R3026	ERJ3GEYJ101X	MGF CHIP 1/16W 100 (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R3031	ERJ3GEYJ821X	MGF CHIP 1/16W 820	
R3032	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R3033	ERJ3GEYJ182V	MGF CHIP 1/16W 1.8K	
R3034	ERJ3GEYJ821X	MGF CHIP 1/16W 820	
R3035	ERJ3GEYJ182V	MGF CHIP 1/16W 1.8K	
R3036	ERJ3GEYJ471X	MGF CHIP 1/16W 470	
R3037	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R3038	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R3039	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R3040	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R3041	ERJ3GEYJ681X	MGF CHIP 1/16W 680	
R3044	ERJ3GEYJ681X	MGF CHIP 1/16W 680	
R3045	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R3048	ERJ3GEYJ681X	MGF CHIP 1/16W 680	
R3050	ERJ3GEYJ821X	MGF CHIP 1/16W 820	
R3129	ERJ3GEYJ391V	MGF CHIP 1/16W 390	
R3130	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R3140	ERJ3GEYJ122V	MGF CHIP 1/16W 1.2K	
R3150	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R3151	ERJ3GEYJ183X	MGF CHIP 1/16W 18K	
R3152	ERJ3GEYJ821X	MGF CHIP 1/16W 820	
R3153	ERJ3GEYJ272X	MGF CHIP 1/16W 2.7K	
R3154	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R3173	ERJ3GEY0R00X	MGF CHIP 1/16W 0 (F,FA,K,KA)	
R3174	ERJ3GEY0R00X	MGF CHIP 1/16W 0 (A,AA,B,C,D,DA,E,EA,G,GA,H,HA,I,IA,J,JA,L,LA,M,MA)	
R3180	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R3181	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R3182	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R3183	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R3184	ERJ3GEYJ821X	MGF CHIP 1/16W 820	
R3185	ERJ3GEYJ182V	MGF CHIP 1/16W 1.8K	

Ref. No.	Part No.	Part Name & Description	Remarks
R3186	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R3190	ERJ3GEY0R00X	MGF CHIP 1/16W 0	
R3213	ERJ3GEY0R00X	MGF CHIP 1/16W 0 (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R3214	ERJ3GEY0R00X	MGF CHIP 1/16W 0 (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R4001	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R4002	ERJ3GEYJ104X	MGF CHIP 1/16W 100K	
R4004	ERJ3GEYJ123X	MGF CHIP 1/16W 12K	
R4005	ERJ3GEYJ333X	MGF CHIP 1/16W 33K	
R4006	ERJ3GEYJ105V	MGF CHIP 1/16W 1M	
R4007	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R4008	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R4009	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R4010	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R4011	ERJ3GEYJ561X	MGF CHIP 1/16W 560	
R4012	ERJ3GEYJ163V	MGF CHIP 1/16W 16K	
R4013	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R4014	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R4015	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R4016	ERJ3GEYJ183X	MGF CHIP 1/16W 18K	
R4017	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R4018	ERJ3GEYJ103X	MGF CHIP 1/10W 10K	
R4019	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R4020	ERJ3GEYJ334V	MGF CHIP 1/16W 330K	
R4021	ERJ3GEYJ122V	MGF CHIP 1/16W 1.2K	
R4022	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R4024	ERJ3GEYJ103X	MGF CHIP 1/10W 10K	
R4027	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R4029	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R4030	ERJ3GEYJ680V	MGF CHIP 1/16W 68	
R4031	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R4032	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R4033	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R4034	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R4035	ERJ3GEYJ101X	MGF CHIP 1/16W 100	
R4046	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R4061	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R4062	ERJ3GEYJ333X	MGF CHIP 1/16W 33K	
R6004	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R6006	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R6007	ERJ3GEYJ102X	MGF CHIP 1/16W 1K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R6008	ERJ3GEYJ103X	MGF CHIP 1/10W 10K	
R6009	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6010	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6011	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R6012	ERJ3GEYJ103X	MGF CHIP 1/10W 10K (G,GA,I,IA,L,LA)	
R6013	ERJ3GEYJ103X	MGF CHIP 1/10W 10K (G,GA,I,IA,L,LA)	
R6014	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6015	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R6016	ERJ3GEYJ102X	MGF CHIP 1/16W 1K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R6017	ERJ3GEYJ102X	MGF CHIP 1/16W 1K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	

Ref. No.	Part No.	Part Name & Description	Remarks
R6018	ERJ3GEYJ102X	MGF CHIP 1/16W 1K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R6019	ERJ3GEYJ103X	MGF CHIP 1/10W 10K (A,AA,B)	
R6019	ERJ3GEYJ474V	MGF CHIP 1/16W 470K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R6020	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6021	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6022	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6024	ERJ3GEYJ104X	MGF CHIP 1/16W 100K	
R6025	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6026	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6027	ERJ3GEYJ272X	MGF CHIP 1/16W 2.7K	
R6028	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R6029	ERJ3GEYJ332X	MGF CHIP 1/16W 3.3K	
R6030	ERJ3GEYJ272X	MGF CHIP 1/16W 2.7K	
R6034	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R6035	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6036	ERJ3GEYJ563V	MGF CHIP 1/16W 56K	
R6037	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6038	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6039	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R6040	ERJ3GEYJ561X	MGF CHIP 1/16W 560	
R6041	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6042	ERJ3GEYJ124V	MGF CHIP 1/16W 120K	
R6046	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6047	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6048	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6049	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6050	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6051	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6052	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6054	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R6056	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6058	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6059	ERJ3GEYJ102X	MGF CHIP 1/16W 1K (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
R6060	ERJ3GEYJ102X	MGF CHIP 1/16W 1K (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
R6062	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6064	ERJ3GEYJ563V	MGF CHIP 1/16W 56K	
R6066	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R6068	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6070	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R6072	ERJ3GEYJ392X	MGF CHIP 1/16W 3.9K	
R6073	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R6074	ERJ3GEYJ223X	MGF CHIP 1/16W 22K	
R6075	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R6077	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R6079	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6080	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6081	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6082	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6083	ERJ3GEYJ681X	MGF CHIP 1/16W 680	
R6084	ERJ3GEYJ561X	MGF CHIP 1/16W 560	
R6085	ERJ3GEYJ561X	MGF CHIP 1/16W 560	

Ref. No.	Part No.	Part Name & Description	Remarks
R6086	ERJ3GEYJ561X	MGF CHIP 1/16W 560	
R6087	ERJ3GEYJ561X	MGF CHIP 1/16W 560	
R6088	ERJ3GEYJ561X	MGF CHIP 1/16W 560	
R6089	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6090	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6091	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6092	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6093	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6094	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6095	ERJ3GEYJ563V	MGF CHIP 1/16W 56K	
R6096	ERJ3GEYJ104X	MGF CHIP 1/16W 100K	
R6097	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6099	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R6100	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K (G,GA,I,IA,L,LA)	
R6101	ERJ3GEYJ104X	MGF CHIP 1/16W 100K (A,AA,B,C,D,DA,E,EA,F,FA,H,HA,J,JA,K,KA,M,MA)	
R6102	VRJSD3D1802	MGF CHIP 1/16W 18K	
R6103	ERJ3GEYJ272X	MGF CHIP 1/16W 2.7K	
R6104	VRJSD3D1002	MGF CHIP 1/16W 10K	
R6108	ERJ3GEYJ224V	MGF CHIP 1/16W 220K	
R6110	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6111	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6112	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6113	ERJ3GEYJ272X	MGF CHIP 1/16W 2.7K	
R6114	ERJ3GEYJ154V	MGF CHIP 1/16W 150K	
R6115	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R6116	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R6119	ERJ8GEYJ101V	MGF CHIP 1/4W 100	
R6120	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6129	ERJ3GEYJ473X	MGF CHIP 1/16W 47K	
R6143	ERJ3GEYJ271V	MGF CHIP 1/16W 270	
R6144	ERJ3GEYJ271V	MGF CHIP 1/16W 270	
R6145	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6146	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R6147	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R6148	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6149	ERJ3GEYJ472X	MGF CHIP 1/16W 4.7K	
R6162	ERJ3GEYJ102X	MGF CHIP 1/16W 1K	
R6191	ERJ3GEYJ222X	MGF CHIP 1/16W 2.2K	
R6201	ERJ3GEYJ103X	MGF CHIP 1/10W 10K	
R6202	ERJ3GEYJ103X	MGF CHIP 1/10W 10K	
R6209	ERJ3GEYJ225V	MGF CHIP 1/16W 2.2M	
R6210	ERJ3GEYJ561X	MGF CHIP 1/16W 560	
R6215	ERJ3GEYJ132V	MGF CHIP 1/16W 1.3K	
R6217	ERJ3GEYJ392V	MGF CHIP 1/16W 3.9K	
R6226	ERJ3GEY0R00X	MGF CHIP 1/16W 0	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C301	ECUV1H330JCV	C CHIP 50V 33PF	
C302	ECUV1H560JCV	C CHIP 50V 56PF	
C305	ECUV1H470JCV	C CHIP 50V 47PF	
C306	VCUSQAC105KB	C CHIP 16V 1UF	
C307	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C309	ECST0JY106	TANTALUM CHIP 6.3V 10UF	
C310	VCUSQAC105KB	C CHIP 16V 1UF	
C311	VCUSQAC105KB	C CHIP 16V 1UF	
C312	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C314	ECST0JY106	TANTALUM CHIP 6.3V 10UF	
C315	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C316	VCUSQAC105KB	C CHIP 16V 1UF	
C317	VCUSQAC105KB	C CHIP 16V 1UF	
C318	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C319	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C320	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C321	ECST0JX226	TANTALUM CHIP 6.3V 22UH	
C326	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C327	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C333	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C335	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C337	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C338	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C339	ECUV1C105ZFN	C CHIP 16V 1UF	
C340	ECUE1H103KBV	C CHIP 50V 0.01UF	
C341	ECUV1H102KBV	C CHIP 50V 1000PF	
C342	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C345	ECUV1H471KBV	C CHIP 50V 470PF	
C346	ECUV1H471KBV	C CHIP 50V 470PF	
C347	ECUV1H102KBV	C CHIP 50V 1000PF	
C357	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C359	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C360	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C361	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C604	ECUV1H150JCV	C CHIP 50V 15PF	
C605	ECST0JX226	TANTALUM CHIP 6.3V 22UH	
C606	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C607	ECUV1H150JCV	C CHIP 50V 15PF	
C610	ECRJA010A11B	TRIMMER CHIP 10PF	
C611	ECUV1H180JCV	C CHIP 50V 18PF	
C613	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C614	VCUSQAC105KB	C CHIP 16V 1UF	
C615	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C616	ECUV1C104KBV	C CHIP 16V 0.1UF	
C617	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C623	ECEV1CA100S	ELECTROLYTIC CHIP 16V 10UF	
C633	VCUSQAC105KB	C CHIP 16V 1UF	
C634	VCUSQAC105KB	C CHIP 16V 1UF	
C636	ECUV1C105ZFN	C CHIP 16V 1UF	
C638	ECUV1C105ZFN	C CHIP 16V 1UF	
C639	ECUV1C105ZFN	C CHIP 16V 1UF	
C640	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C641	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C642	ECUV1A105KBN	C CHIP 10V 1UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C643	ECST0JY106	TANTALUM CHIP 6.3V 10UF	
C644	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C645	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C646	ECST0JX226	TANTALUM CHIP 6.3V 22UH	
C647	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C651	ECUV1H102KBV	C CHIP 50V 1000PF	
C703	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C704	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C706	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C707	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C708	ECEV1CA470S	ELECTROLYTIC CHIP 16V 47UF	
C709	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C1002	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1003	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1005	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C1007	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C1008	ECUV1H101JCV	C CHIP 50V 100PF	
C1009	VCUSJEJ105KB	C CHIP 6.3V 1UF	
C1010	ECUV1C104KBV	C CHIP 16V 0.1UF (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C1011	ECUV1H472KBV	C CHIP 50V 4700PF	
C1012	ECUV1H472KBV	C CHIP 50V 4700PF	
C1013	ECUV1H101JCV	C CHIP 50V 100PF	
C1014	ECUV1H470JCV	C CHIP 50V 47PF	
C1015	ECUV1H101JCV	C CHIP 50V 100PF	
C1016	ECUV1H101JCV	C CHIP 50V 100PF	
C1017	ECUV1H470JCV	C CHIP 50V 47PF (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C1018	ECUV1H472KBV	C CHIP 50V 4700PF	
C1019	ECUV1H472KBV	C CHIP 50V 4700PF (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C1020	VCUSQBC105KB	C CHIP 16V 1UF	
C1021	ECEV1CA470S	ELECTROLYTIC CHIP 16V 47UF	
C1022	VCUSQAC475KB	C CHIP 16V 4.7UF	
C1023	VCUSJBJ335KB	C CHIP 6.3V 3.3UF	
C1024	ECST1AY475N	TANTALUM CHIP 10V 4.7UF	
C1025	ECUV1H471KBV	C CHIP 50V 470PF	
C1026	ECUV0J225KBN	C CHIP 6.3V 2.2UF	
C1027	ECEV0GA470S	ELECTROLYTIC CHIP 4V 47UF	
C1028	ECUV1H102KBV	C CHIP 50V 1000PF	
C1029	VCUSQBC105KB	C CHIP 16V 1UF	
C1030	ECUV1C105ZFN	C CHIP 16V 1UF	
C1031	ECEV1CA100S	ELECTROLYTIC CHIP 16V 10UF	
C1032	VCUSQBC105KB	C CHIP 16V 1UF (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C1033	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1034	VCUSQBH105ZF	C CHIP 50V 1UF	
C1035	VCUSQBH105ZF	C CHIP 50V 1UF	
C1036	ECUV1H102KBV	C CHIP 50V 1000PF	
C1037	ECUV0J225KBN	C CHIP 6.3V 2.2UF (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C1038	ECEV0JA220S	ELECTROLYTIC CHIP 6.3V 22UF (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C1039	ECUV1H102KBV	C CHIP 50V 1000PF	
C1040	ECUV1C105ZFN	C CHIP 16V 1UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C1041	ECEV1CA100S	ELECTROLYTIC CHIP 16V 10UF	
C1042	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47UF	
C1044	ECST0JY226R	TANTALUM CHIP 6.3V 22UF	
C1045	ECUV1A105ZFV	C CHIP 10V 1UF	
C1046	VCUSQAC105KB	C CHIP 16V 1UF	
C1047	ECEV1CA100S	ELECTROLYTIC CHIP 16V 10UF (C)	
C1049	ECUV1H102KBV	C CHIP 50V 1000PF (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C1051	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C1053	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1054	ECUV1A105ZFV	C CHIP 10V 1UF	
C1055	ECUV1A105KBN	C CHIP 10V 1UF (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C1060	ECUV1A105ZFV	C CHIP 10V 1UF (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C1061	ECUV1H470JCV	C CHIP 50V 47PF	
C1062	ECUV1H470JCV	C CHIP 50V 47PF	
C1063	ECUV1H101JCV	C CHIP 50V 100PF (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C1064	ECUV1C104KBV	C CHIP 16V 0.1UF (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C1065	ECUE1H103KBV	C CHIP 50V 0.01UF	
C1101	ECUV0J225KBN	C CHIP 6.3V 2.2UF (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA)	
C2001	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C2002	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C2003	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C2007	ECEV0JA220S	ELECTROLYTIC CHIP 6.3V 22UF	
C2008	ECUV1E333KBN	C CHIP 25V 0.033UF	
C2010	ECUV1C683KBV	C CHIP 16V 0.068UF	
C2011	ECUV1C334KBN	CERAMIC CHIP 16V 0.33UF +-10	
C2012	ECUV1C473KBV	C CHIP 16V 0.047UF	
C2013	ECUV1C473KBV	C CHIP 16V 0.047UF	
C2015	ECUV1H152KBV	C CHIP 50V 1500PF	
C2016	ECUV1H331KBV	C CHIP 50V 330PF	
C2017	ECUV1A105KBN	C CHIP 10V 1UF	
C2021	ECUV1E473ZFV	C CHIP 25V 0.047UF	
C2022	ECUV1E473ZFN	C CHIP 25V 0.047UF	
C2023	ECUV1C104KBV	C CHIP 16V 0.1UF	
C2024	ECUV1A105KBN	C CHIP 10V 1UF	
C2025	ECUV1E103KBV	C CHIP 25V 0.01UF	
C2030	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C2031	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C2032	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C2040	ECEV1CA100S	ELECTROLYTIC CHIP 16V 10UF	
C3001	VCUSQAA335KB	C CHIP 10V 3.3UF	
C3002	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3003	ECST0JX226	TANTALUM CHIP 6.3V 22UH	
C3005	ECUV1H220JCV	C CHIP 50V 22PF	
C3006	ECUV1H332KBV	C CHIP 50V 3300PF	
C3007	ECUV1H104ZFN	C CHIP 50V 0.1UF	
C3008	ECUE1H103KBV	C CHIP 50V 0.01UF	
C3009	ECUV1H104ZFN	C CHIP 50V 0.1UF	
C3010	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3011	ECUV1H221JCV	C CHIP 50V 220PF	

Ref. No.	Part No.	Part Name & Description	Remarks
C3012	ECUV1H821KBV	C CHIP 50V 820PF	
C3013	ECUV1H560JCV	C CHIP 50V 56PF	
C3014	ECUV1H331JCV	C CHIP 50V 330PF	
C3015	ECUV1H561JCV	C CHIP 50V 560PF	
C3017	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3018	ECUV1C104KBV	C CHIP 16V 0.1UF	
C3019	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3021	ECST0JX226	TANTALUM CHIP 6.3V 22UH	
C3023	ECUV1C473KBV	C CHIP 16V 0.047UF	
C3024	ECUV1C105ZFN	C CHIP 16V 1UF	
C3025	ECUE1H103KBV	C CHIP 50V 0.01UF	
C3028	ECUE1H103KBV	C CHIP 50V 0.01UF	
C3029	ECUE1H103KBV	C CHIP 50V 0.01UF	
C3030	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3031	ECUV1A224KBV	C CHIP 10V 0.22UF	
C3032	ECUV1H332KBV	C CHIP 50V 3300PF	
C3033	ECST1CY225	TANTALUM CHIP 16V 2.2UF	
C3034	ECUV1C105ZFN	C CHIP 16V 1UF	
C3036	ECST1AY475N	TANTALUM CHIP 10V 4.7UF	
C3038	ECUV1H560JCV	C CHIP 50V 56PF	
C3039	ECUV1H150JCV	C CHIP 50V 15PF	
C3040	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3042	ECST0JX226	TANTALUM CHIP 6.3V 22UH	
C3043	ECST0JX226	TANTALUM CHIP 6.3V 22UH	
C3045	ECST0JY335	TANTALUM CHIP 6.3V 3.3UF	
C3046	ECEV0GA221S	ELECTROLYTIC CHIP 4V 220UF	
C3047	ECUV1A105KBN	C CHIP 10V 1UF	
C3048	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3053	ECUV1H390JCV	C CHIP 50V 39PF	
C3054	ECUV1H101JCV	C CHIP 50V 100PF	
C3055	ECUV1H181JCV	C CHIP 50V 180PF	
C3057	ECUV1H180JCV	C CHIP 50V 18PF	
C3058	ECUV1H120JCV	C CHIP 50V 12PF	
C3059	ECUV1H100DCV	C CHIP 50V 10PF	
C3060	ECUV1H120JCV	C CHIP 50V 12PF	
C3061	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3068	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3070	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C3072	ECUE1H103KBV	C CHIP 50V 0.01UF	
C3073	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C3074	ECST0JX226	TANTALUM CHIP 6.3V 22UH	
C3075	ECUE1H103KBV	C CHIP 50V 0.01UF	
C3077	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3078	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3079	ECUV1H102KBV	C CHIP 50V 1000PF	
C3080	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3081	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3085	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C3098	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C3107	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3132	ECUV1C105ZFN	C CHIP 16V 1UF	
C3135	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3139	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C3150	ECUE1H103ZFV	C CHIP 50V 0.01UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C3152	ECUV1H681KBV	C CHIP 50V 680PF (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C3153	ECUV1H681KBV	C CHIP 50V 680PF (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
C4002	ECEV0JA220S	ELECTROLYTIC CHIP 6.3V 22UF	
C4004	ECST0JY106	TANTALUM CHIP 6.3V 10UF	
C4005	ECEV0JA220S	ELECTROLYTIC CHIP 6.3V 22UF	
C4006	ECST0JX226	TANTALUM CHIP 6.3V 22UH	
C4007	ECUV1C105ZFN	C CHIP 16V 1UF	
C4008	ECUV1E273KBN	C CHIP 25V 0.027UF	
C4009	ECUV1H822KBV	C CHIP 50V 8200PF	
C4010	ECUV1H221KBV	C CHIP 50V 220PF	
C4011	ECUV1A105KBN	C CHIP 10V 1UF	
C4012	ECUV1H152KBV	C CHIP 50V 1500PF	
C4013	ECUV1H222KBV	C CHIP 50V 2200PF	
C4015	ECUV1A105KBN	C CHIP 10V 1UF	
C4016	ECEV1HA3R3S	ELECTROLYTIC CHIP 50V 3.3UF	
C4017	ECST0JX226	TANTALUM CHIP 6.3V 22UH	
C4018	ECUV1H103KBV	C CHIP 50V 0.01UF	
C4019	ECST1AY475N	TANTALUM CHIP 10V 4.7UF	
C4020	ECUV1H470JCV	C CHIP 50V 47PF	
C4021	ECUV1H102KBV	C CHIP 50V 1000PF	
C4022	ECUT2A472JCW	C CHIP 100V 4700PF	
C4023	ECUV1H682KBN	C CHIP 50V 6800PF	
C4024	ECUV1E223KBV	C CHIP 25V 0.022UF	
C4025	ECUV1A105KBN	C CHIP 10V 1UF	
C4026	ECST0JX226	TANTALUM CHIP 6.3V 22UH	
C4027	ECUV1H104ZFN	C CHIP 50V 0.1UF	
C4041	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C6001	ECUV1H330JCV	C CHIP 50V 33PF	
C6002	ECUV1A224KBV	C CHIP 10V 0.22UF	
C6004	ECUV1C105ZFN	C CHIP 16V 1UF	
C6006	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C6007	ECUV1H120JCV	C CHIP 50V 12PF	
C6008	ECUV1H100DCV	C CHIP 50V 10PF	
C6009	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C6011	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C6013	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C6014	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C6017	ECUV1C104KBV	C CHIP 16V 0.1UF	
C6018	ECUV1A105KBN	C CHIP 10V 1UF	
C6020	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C6022	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C6023	ECUV1H102KBV	C CHIP 50V 1000PF	
C6025	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47UF	
C6028	ECUV1H0R5CCV	C CHIP 50V 0.5PF	
C6029	ECUV1C105ZFN	C CHIP 16V 1UF	
C6031	ECUE1H103KBV	C CHIP 50V 0.01UF	
C6044	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C6201	ECUV1C104KBV	C CHIP 16V 0.1UF	
C6202	ECUV1C104KBV	C CHIP 16V 0.1UF	
C6207	ECUE1H121JCQ	C CHIP 50V 120PF	
C6208	ECUV1C224ZFN	C CHIP 16V 0.22UF	
C6214	ECUV1H102KBV	C CHIP 50V 1000PF	

Ref. No.	Part No.	Part Name & Description	Remarks
C6220	ECUV1C155ZFN	C CHIP 16V 1.5UF	
C6221	ECUV1H392KBV	C CHIP 50V 3900PF	
C6222	VCUSQAC105KB	C CHIP 16V 1UF	
C6223	ECST0JY226R	TANTALUM CHIP 6.3V 22UF	
C6225	ECUV1H102KBV	C CHIP 50V 1000PF	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL3001	VLFW0041		

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L302	VLQ0426J470	COIL CHIP 47UH	
L303	VLQ0426J330	COIL CHIP 33UH	
L305	VLQ0426J3R9	COIL CHIP 3.9UH	
L307	ELJFA101KF2	COIL CHIP 100UH	
L308	VLQ0319K100	COIL CHIP 10UH	
L602	VLQ0426J150	COIL CHIP 15UH	
L605	VLQ0163K150	COIL CHIP 15UH	
L1001	NP05DA100M	COIL 10UH	
L1002	NP05DA100M	COIL 10UH	
L1003	LSLQL06S330M	CHOKE COIL 33UH (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
L1004	NP05DA330M	COIL 33UH	
L1005	LSLQJ05S100M	CHOKE COIL 10UH	
L1006	VLQ0319K100	COIL CHIP 10UH	
L1007	VLJW3TC100KT	COIL 10U	
L1008	LSLJCMA4R7MF	COIL COIL CHIP 4.7UH	
L1009	VLQ0426J470	COIL CHIP 47UH	
L1010	VLQ0426J470	COIL CHIP 47UH (A,AA,C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
L1011	VLQ0426J470	COIL CHIP 47UH	
L1012	VLJW3TC100KT	COIL 10U	
L1014	LSLJCMA4R7MF	COIL COIL CHIP 4.7UH (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
L1015	LSLJDJA100KF	COIL CHIP 10UF (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
L1017	LSLQL06S330M	CHOKE COIL 33UH	
L3001	LSLJDJA220KF	BEAD INDUCTOR 22UH	
L3002	LSLJDJA220KF	BEAD INDUCTOR 22UH	
L3003	LSLJDJA220KF	BEAD INDUCTOR 22UH	
L3004	LSLJDJA220KF	BEAD INDUCTOR 22UH	
L3006	LSLJDJA220KF	BEAD INDUCTOR 22UH	
L3009	VLQ0426J820	COIL CHIP 82UH	
L3011	VLQ0426J470	COIL CHIP 47UH	
L3012	VLQ0426J120	COIL CHIP 12UH	
L3013	VLQ0163J331	COIL CHIP 330UH	
L3014	VLQ0426J180	COIL CHIP 18UH	
L3015	VLQ0163J331	COIL CHIP 330UH	
L3016	VLQ0426J470	COIL CHIP 47UH	
L3017	VLQ0163J331	COIL CHIP 330UH	
L3030	LSLJDJA220KF	BEAD INDUCTOR 22UH	

Ref. No.	Part No.	Part Name & Description	Remarks
L4001	VLQ0319K221	COIL CHIP 220UH	

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X601	VSXW0096	CRYSTAL OSCILLATOR	
X3001	VSXW0087	CRYSTAL OSCILLATOR	
X6001	VSXW0093	CRYSTAL OSCILLATOR	
X6002	LSSX0030	CRYSTAL OSCILLATOR	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3	LSJP03AE014	CONNECTOR 14P (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
P3	VJPW0254	CONNECTOR 5P (B,C)	
FP1	LSJSRF28DGA	CONNECTOR 28P	
FP2	LSJS09AA020	CONNECTOR 20P	
FP3	LSJSQG22DG	CONNECTOR 22P	
FP6	LSJS02AC039C	CONNECTOR 39P	
FP7	VJPW501MP14	CONNECTOR 14P	
FP8	LSJS09AA012	CONNECTOR 12P	
FP9	LSJS09AA020	CONNECTOR 20P	
FP10	LSJS05AA022	CONNECTOR 22P (C,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
FP11	LSJSQG11DG	CONNECTOR 11P	
FP11	LSJSQG11DG	CONNECTOR 11P	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1001	LSSF008C25T	FUSE CHIP 32V 2.5A	⚠
F1001	LSSF015D25T	FUSE 24V 2.5A	⚠
F1002	LSSF008F15T	FUSE CHIP 63V 1.5A	⚠
F1002	LSSF015D15T	FUSE 24V 1.5A	⚠
PR1001	ERJ3GEY0R00X	MGF CHIP 1/16W 0 (A,AA,D,DA,E,EA,F,FA,G,GA,H,HA,I,IA,J,JA,K,KA,L,LA,M,MA)	
PR1001	LSSF003C06T	FUSE 32V (B,C)	

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1001	LSTP0106	TRANSFORMER	
T4001	EQQ6QT001T	TRANSFORMER	

13.3.2. ELECTRONIC VIEWFINDER C.B.A.

(Model: B, C)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC901	AN2515NS	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q901	2SD968A(S)	TRANSISTOR SI NPN CHIP	⚠
Q902	2SB1218A	TRANSISTOR SI PNP CHIP	
Q902	2SA1576A106R	TRANSISTOR SI PNP CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D901	SFPL-52V	DIODE SI CHIP	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R901	ERJ3GEYJ4R7V	MGF CHIP 1/16W 4.7	
R902	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R903	VRJSD3D1302V	MGF CHIP 1/16W 13K	
R904	VRJSD3D1203V	MGF CHIP 1/16W 120K	
R905	ERJ3GEYJ514V	MGF CHIP 1/16W 510K	
R906	ERJ3GEYJ242V	MGF CHIP 1/16W 2.4K	
R907	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R908	VRJSD3D3302	MGF CHIP 1/16W 33K	
R911	ERJ3GEYJ3R9V	MGF CHIP 1/16W 3.9	
R912	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R913	ERJ3GEYJ471V	MGF CHIP 1/10W 470	
R914	ERJ3GEYJ272V	MGF CHIP 1/16W 2.7K	
R915	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R916	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R917	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R918	ERJ3GEYJ105V	MGF CHIP 1/16W 1M	
R919	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R920	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R921	ERJ6GEYJ106V	MGF CHIP 1/10W 10M	
R922	ERJ6GEYJ106V	MGF CHIP 1/10W 10M	
R923	ERJ6GEYJ185V	MGF CHIP 1/10W 1.8M	
R925	ERJ6GEYJ684V	MGF CHIP 1/10W 680K	
R926	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R927	ERJ6GEYJ185V	MGF CHIP 1/10W 1.8M	
R929	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
VR901	EVM7JSX30BE2	VARIABLE CHIP 220	
VR902	VRVW0028	VARIABLE CHIP 5M	
VR903	EVM7ESX30B26	VARIABLE CHIP 2M	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C902	ECUV1H123KBV	C CHIP 50V 0.012UF	
C903	VCUSQBA105KB	C CHIP 10V 1UF	
C904	EEAFC0J101H	ELECTROLYTIC 6.3V 100UF	
C905	VCUSQBA105KB	C CHIP 10V 1UF	
C906	ECQV1H104JM2	POLYESTER 50V 0.1UF	
C907	ECUV1C104KBV	C CHIP 16V 0.1UF	
C908	EEAFC0J101H	ELECTROLYTIC 6.3V 100UF	
C909	ECUV1H151JCV	C CHIP 50V 150PF	
C910	MCUV2A332JUM	C CHIP 100V 3300PF	⚠
C911	EEAFC0J470H	ELECTROLYTIC 16V 47UF	
C912	EEAFC1C470H	ELECTROLYTIC 16V 47UF	
C913	ECUV1C104KBV	C CHIP 16V 0.1UF	
C914	ECUV1C104KBV	C CHIP 16V 0.1UF	
C915	DE405B151K1K	CERAMIC 1KV 150PF	⚠
C916	ECEA1HKS010I	ELECTROLYTIC 50V 1UF	
C917	ECKR2H331KB5	CERAMIC 500V 330PF	⚠

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L901	VLQ0319K150	COIL CHIP 15UH	
L902	VLQ0426J220	COIL CHIP 22UH	
L903	ELH5L3105	LINEALITY COIL	⚠

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P902	VJPW0254	CONNECTOR 5P	
P903	VJPW0004J1	PIN HEADER 4P	
FP901	LSJS09AA006	CONNECTOR 6P	

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T901	ETF08L204A	TRANSFORMER FLYBACK	⚠

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
701	VEKW1639	CRT SOCKET UNIT	
702	LSEK0375	CONNECTOR CABLE W/PLUG,DC5V	
703	ELY05V583C	DEFLECTION YOKE	⚠
704	M01LSX07WB01	CRT	⚠
705	LSEK0375	CONNECTOR CABLE W/PLUG,DC5V	

13.3.3. COLOR ELECTRONIC VIEWFINDER C.B.A.

(Model: A, D, E, F, G, H, I, J, K, L, M)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA

Note:

For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC901	AN12500A	IC, LINEAR	
IC901	AN12500A-V	IC, LINEAR	
IC902	TC7W74FU	IC, CMOS STANDARD LOGIC	E.S.D.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q901	2SD1819A	TRANSISTOR SI NPN CHIP	
Q901	2SC4081T106R	TRANSISTOR SI NPN CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D901	NSCW100	LED	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R902	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R903	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R904	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R907	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R908	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R909	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R910	ERJ3GEYJ271V	MGF CHIP 1/16W 270	
R911	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R912	ERJ3GEYJ113V	MGF CHIP 1/16W 11K	
R913	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R915	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R916	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R917	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R918	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R919	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R920	VRJSD3D2702	MGF CHIP 1/16W 27K	
R921	VRJSD3D1001	MGF CHIP 1/16W 1K	
R922	VRJSD3D2202	MGF CHIP 1/16W 22K	
R937	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R939	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R940	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R941	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R942	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R943	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R944	ERJ3GEYJ122V	MGF CHIP 1/16W 1.2K	
R945	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R946	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R947	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R955	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R957	VRJSD3D2402	MGF CHIP 1/16W 24K	
R958	VRJSD3D2402	MGF CHIP 1/16W 24K	
R960	VRJSD3D2702	MGF CHIP 1/16W 27K	
R961	VRJSD3D2702	MGF CHIP 1/16W 27K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C905	ECEV1EA4R7S	ELECTROLYTIC CHIP 25V 4.7UF	
C908	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C910	ECUV1H152KBV	C CHIP 50V 1500PF	
C911	ECUV1A105ZFV	C CHIP 10V 1UF	
C912	NMA0J226MTR	ELECTROLYTIC CHIP 6.3V 22UF	
C913	ECUV1C104KBV	C CHIP 16V 0.1UF	
C914	ECUV1C104KBV	C CHIP 16V 0.1UF	
C915	ECUV0J225KBN	C CHIP 6.3V 2.2UF	
C916	ECUV1H152KBV	C CHIP 50V 1500PF	
C917	ECST0JY475	TANTALUM CHIP 6.3V 4.7UF	
C918	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C919	ECUV1C104KBV	C CHIP 16V 0.1UF	
C920	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C923	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C924	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C927	ECUV1C104KBN	C CHIP 16V 0.1UF	
C928	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C929	ECEV1CA220S	ELECTROLYTIC CHIP 16V 22UF	
C930	VCUSQBA105KB	C CHIP 10V 1UF	
C931	ECUV1H271JCV	C CHIP 50V 270PF	
C932	ECUV1H561JCV	C CHIP 50V 560PF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L902	VLQ0426J150	COIL CHIP 15UH	
L905	VLQ0426J150	COIL CHIP 15UH	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P901	LSJP03AE014	CONNECTOR 14P	
FP901	LSJS05AA022	CONNECTOR 22P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW901	EVQPQHB55	SWITCH PUSH	
SW902	EVQPQHB55	SWITCH PUSH	
SW903	EVQPQHB55	SWITCH PUSH	
SW904	EVQPQHB55	SWITCH PUSH	
SW905	EVQPQHB55	SWITCH PUSH	

13.3.4. COLOR ELECTRONIC VIEWFINDER C.B.A.

(Model: AA, DA, EA, FA, GA, HA, IA, JA, KA, LA, MA)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC901	AN2536FHQ	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q901	2SD1819A	TRANSISTOR SI NPN CHIP	
Q901	2SC4081T106R	TRANSISTOR SI NPN CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D901	NSCW100	LED	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R902	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R903	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R904	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R907	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R908	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R909	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R910	ERJ3GEYJ271V	MGF CHIP 1/16W 270	
R911	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R912	ERJ3GEYJ113V	MGF CHIP 1/16W 11K	
R913	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R915	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R916	ERJ3GEYJ122V	MGF CHIP 1/16W 1.2K	
R917	ERJ3GEYJ681V	MGF CHIP 1/16W 680	
R918	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R920	VRJSD3D2702	MGF CHIP 1/16W 27K	
R921	VRJSD3D4701V	MGF CHIP 1/16W 4.7K	
R922	VRJSD3D2202	MGF CHIP 1/16W 22K	
R937	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R938	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R939	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R940	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R941	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R942	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R943	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R944	ERJ3GEYJ122V	MGF CHIP 1/16W 1.2K	
R945	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R946	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R947	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C905	ECEV1EA4R7S	ELECTROLYTIC CHIP 25V 4.7UF	
C908	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C910	ECUV1H152KBV	C CHIP 50V 1500PF	
C911	ECUV1A105ZFV	C CHIP 10V 1UF	
C912	NMA0J226MTR	ELECTROLYTIC CHIP 6.3V 22UF	
C913	ECUV1C104KBV	C CHIP 16V 0.1UF	
C914	ECUV1C104KBV	C CHIP 16V 0.1UF	
C915	ECUV0J225KBN	C CHIP 6.3V 2.2UF	
C916	ECUV1H152KBV	C CHIP 50V 1500PF	
C917	ECST0JY475	TANTALUM CHIP 6.3V 4.7UF	
C918	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C919	ECUV1C104KBV	C CHIP 16V 0.1UF	
C920	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C923	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C924	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C926	ECUV1H103KBN	C CHIP 50V 0.01UF	
C927	ECUV1C104KBN	C CHIP 16V 0.1UF	
C929	ECEV1CA220S	ELECTROLYTIC CHIP 16V 22UF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L902	VLQ0426J150	COIL CHIP 15UH	
L903	ERJ6GEY0R00V	MGF CHIP 1/8W 0	
L905	VLQ0426J150	COIL CHIP 15UH	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P901	LSJP03AE014	CONNECTOR 14P	
FP901	LSJS05AA016	CONNECTOR 16P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW901	EVQPQHB55	SWITCH PUSH	
SW902	EVQPQHB55	SWITCH PUSH	
SW903	EVQPQHB55	SWITCH PUSH	
SW904	EVQPQHB55	SWITCH PUSH	
SW905	EVQPQHB55	SWITCH PUSH	

13.3.5. LIQUID CRYSTAL DISPLAY C.B.A.

(Model: C, D, DA, E, EA, F, FA, G, GA, H, HA, M, MA)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC9001	AN2545FHQ	IC, LINEAR	
IC9001	AN2545NFHQ	IC, LINEAR	
IC9002	TA75S558FTEL	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q1203	UN5112	TRANSISTOR SI PNP CHIP	
Q1203	DTA124EUA106	TRANSISTOR SI PNP CHIP	
Q1206	2SB1218A	TRANSISTOR SI PNP CHIP	
Q1206	2SA1576A106R	TRANSISTOR SI PNP CHIP	
Q1207	UN5212	TRANSISTOR SI NPN CHIP	
Q1207	DTC124EUA106	TRANSISTOR SI NPN CHIP	
Q1208	2SD1819A	TRANSISTOR SI NPN CHIP	
Q1208	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q1209	2SD1819A	TRANSISTOR SI NPN CHIP	
Q1209	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q1210	UN5213	TRANSISTOR SI PNP CHIP	
Q1210	DTC144EUA106	TRANSISTOR SI NPN CHIP	
Q1211	2SD1819A	TRANSISTOR SI NPN CHIP	
Q1211	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q1212	2SB1218A	TRANSISTOR SI PNP CHIP	
Q1212	2SA1576A106R	TRANSISTOR SI PNP CHIP	
Q1213	2SD2351T106V	TRANSISTOR SI NPN CHIP	
Q1213	2SD2351T106W	TRANSISTOR SI NPN CHIP	
Q1214	2SD1819A	TRANSISTOR SI NPN CHIP	
Q1214	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q1215	UN5212	TRANSISTOR SI NPN CHIP	
Q1215	DTC124EUA106	TRANSISTOR SI NPN CHIP	
Q9004	UN5212	TRANSISTOR SI NPN CHIP (H,HA,M,MA)	
Q9004	DTC124EUA106	TRANSISTOR SI NPN CHIP (H,HA,M,MA)	
Q9005	UN5114	TRANSISTOR SI PNP CHIP (H,HA,M,MA)	
Q9005	DTA114YUA106	TRANSISTOR SI PNP CHIP (H,HA,M,MA)	
Q9051	2SD1119	TRANSISTOR SI NPN CHIP	⚠
Q9051	2SD2150T100R	TRANSISTOR SI NPN CHIP	⚠
Q9052	2SD1119	TRANSISTOR SI NPN CHIP	⚠
Q9052	2SD2150T100R	TRANSISTOR SI NPN CHIP	⚠
Q9053	2SB1218A	TRANSISTOR SI PNP CHIP	
Q9053	2SA1576A106R	TRANSISTOR SI PNP CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1203	MA8056-LTX	DIODE ZENER	
D1204	MA8120-H	DIODE ZENER CHIP 12V	
D1206	MA8068-M	DIODE ZENER	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1215	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R1216	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R1217	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R1218	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R1219	ERJ3GEYJ561V	MGF CHIP 1/16W 560	
R1220	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R1222	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R1223	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R1224	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R1225	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R1226	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R1227	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R9001	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R9003	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R9004	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R9005	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R9006	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R9010	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9011	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9012	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9013	ERJ3GEYJ561V	MGF CHIP 1/16W 560	
R9014	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R9015	ERJ3GEYJ123V	MGF CHIP 1/16W 12K	
R9016	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R9017	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R9018	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R9019	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R9020	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9021	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9022	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9023	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R9024	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R9025	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R9026	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R9027	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R9028	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R9029	ERJ3GEYJ473V	MGF CHIP 1/16W 47K (H,HA,M,MA)	
R9029	ERJ3GEYJ563V	MGF CHIP 1/16W 56K (C,D,DA,E,EA,F,FA,G,GA)	
R9030	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R9031	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R9032	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R9033	ERJ3GEYJ333V	MGF CHIP 1/16W 33K (H,HA,M,MA)	
R9051	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R9052	ERJ3GEYJ102V	MGF CHIP 1/16W 1K (C,D,DA,E,EA,F,FA,G,GA)	
R9054	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
VR9001	VRVW0024	VARIABLE 10K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1204	VCUSJEJ105KB	C CHIP 6.3V 1UF	
C1206	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1207	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1208	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1209	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1210	ECUV1E103KBV	C CHIP 25V 0.01UF	
C1211	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1212	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1213	ECUV1E103KBV	C CHIP 25V 0.01UF	
C9003	ECST0JY475	TANTALUM CHIP 6.3V 4.7UF	
C9007	ECUV1A105ZFV	C CHIP 10V 1UF	
C9008	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C9009	NMA0J226MTR	ELECTROLYTIC CHIP 6.3V 22UF	
C9010	ECUV1H681KBV	C CHIP 50V 680PF	
C9011	ECUV1C104KBV	C CHIP 16V 0.1UF	
C9012	ECUV1C104KBV	C CHIP 16V 0.1UF	
C9013	VCUSJBJ225KB	C CHIP 6.3V 2.2UF	
C9014	ECUV1H152KBV	C CHIP 50V 1500PF	
C9015	ECST0JY475	TANTALUM CHIP 6.3V 4.7UF	
C9016	ECST0JY106	TANTALUM CHIP 6.3V 10UF	
C9017	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9018	ECUV1C104KBV	C CHIP 16V 0.1UF	
C9019	ECST1CY475	TANTALUM CHIP 16V 4.7UF	
C9020	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9021	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9022	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9023	VCUSQAC225KB	C CHIP 16V 2.2UF	
C9024	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9025	ECUV1H151JCV	C CHIP 50V 150PF	
C9026	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9027	ECUV1C104KBV	C CHIP 16V 0.1UF	
C9028	VCUSQBC105KB	C CHIP 16V 1UF	
C9029	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C9031	ECST0JY106	TANTALUM CHIP 6.3V 10UF	
C9032	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C9051	ECUV1A106KBP	C CHIP 10V 10UF	
C9052	ECHU1H273JB5	POLYESTER CHIP 50V 0.027UF	
C9053	LSCUCAD150J	C CHIP 2KV 15PF	
C9054	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C9055	LSCUCAD150J	C CHIP 2KV 15PF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1201	VLQ0319K100	COIL CHIP 10UH	
L1202	ELJFA150KF2	COIL 15UH	
L1203	LSLQK05S100M	CHOKE COIL 10UH	
L9001	VLQ0426J150	COIL CHIP 15UH	
L9003	VLQ0426J150	COIL CHIP 15UH	
L9004	VLQ0426J150	COIL CHIP 15UH	
L9005	VLQ0426J150	COIL CHIP 15UH	
L9006	VLQ0426J150	COIL CHIP 15UH	
L9007	VLQ0426J150	COIL CHIP 15UH	
L9051	SLF6028T680M	CHOKE COIL 68UH	⚠
FP1201	LSJSQG22DG	CONNECTOR 22P	
FP9001	LSJSRF24DG	CONNECTOR 24P (C,D,DA,E,EA,F,FA,G,GA)	
FP9002	LSJSRF24DG	CONNECTOR 24P (H,HA,M,MA)	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
PR9051	LSSF003C10T	FUSE 32V 1A	
PR9051	LSSF007C10T	FUSE 32V 1A	

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T9051	ETJ11K95AM	TRANSFORMER	⚠

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
706	VMZW0668	INSULATION SHEET,PLASTIC (H,HA,M,MA)	

13.3.6. LIQUID CRYSTAL DISPLAY C.B.A.

(Model: I, IA, J, JA, K, KA, L, LA)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA

Note:

For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC9001	AN2545FHQ	IC, LINEAR	
IC9001	AN2545NFHQ	IC, LINEAR	
IC9002	TA75S558FTEL	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q1203	UN5112	TRANSISTOR SI PNP CHIP	
Q1203	DTA124EUA106	TRANSISTOR SI PNP CHIP	
Q1206	2SB1218A	TRANSISTOR SI PNP CHIP	
Q1206	2SA1576A106R	TRANSISTOR SI PNP CHIP	
Q1207	UN5212	TRANSISTOR SI NPN CHIP	
Q1207	DTC124EUA106	TRANSISTOR SI NPN CHIP	
Q1208	2SD1819A	TRANSISTOR SI NPN CHIP	
Q1208	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q1209	2SD1819A	TRANSISTOR SI NPN CHIP	
Q1209	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q1210	UN5213	TRANSISTOR SI PNP CHIP	
Q1210	DTC144EUA106	TRANSISTOR SI NPN CHIP	
Q1211	2SD1819A	TRANSISTOR SI NPN CHIP	
Q1211	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q1212	2SB1218A	TRANSISTOR SI PNP CHIP	
Q1212	2SA1576A106R	TRANSISTOR SI PNP CHIP	
Q1213	2SD2351T106V	TRANSISTOR SI NPN CHIP	
Q1213	2SD2351T106W	TRANSISTOR SI NPN CHIP	
Q1214	2SD1819A	TRANSISTOR SI NPN CHIP	
Q1214	2SC4081T106R	TRANSISTOR SI NPN CHIP	
Q1215	UN5212	TRANSISTOR SI NPN CHIP	
Q1215	DTC124EUA106	TRANSISTOR SI NPN CHIP	
Q9004	UN5212	TRANSISTOR SI NPN CHIP	
Q9004	DTC124EUA106	TRANSISTOR SI NPN CHIP	
Q9005	UN5114	TRANSISTOR SI PNP CHIP	
Q9005	DTA114YUA106	TRANSISTOR SI PNP CHIP	
Q9051	2SD1119	TRANSISTOR SI NPN CHIP	⚠
Q9051	2SD2150T100R	TRANSISTOR SI NPN CHIP	⚠
Q9052	2SD1119	TRANSISTOR SI NPN CHIP	⚠
Q9052	2SD2150T100R	TRANSISTOR SI NPN CHIP	⚠
Q9053	2SB1218A	TRANSISTOR SI PNP CHIP	
Q9053	2SA1576A106R	TRANSISTOR SI PNP CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1203	MA8056-LTX	DIODE ZENER	
D1204	MA8120-H	DIODE ZENER CHIP 12V	
D1206	MA8068-M	DIODE ZENER	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1215	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R1216	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R1217	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R1218	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R1219	ERJ3GEYJ561V	MGF CHIP 1/16W 560	
R1220	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R1222	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R1223	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R1224	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R1225	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R1226	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R1227	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R9001	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R9003	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R9004	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R9005	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R9006	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R9010	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9011	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9012	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9013	ERJ3GEYJ561V	MGF CHIP 1/16W 560	
R9014	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R9015	ERJ3GEYJ123V	MGF CHIP 1/16W 12K	
R9016	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R9017	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R9018	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R9019	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R9020	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9021	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9022	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R9023	ERJ3GEYJ333V	MGF CHIP 1/16W 33K	
R9024	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R9025	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R9026	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R9027	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R9028	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R9029	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R9030	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R9031	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R9032	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R9033	ERJ3GEYJ333V	MGF CHIP 1/16W 33K	
R9051	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R9054	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
VR9001	VRVW0024	VARIABLE 10K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1204	VCUSJEJ105KB	C CHIP 6.3V 1UF	
C1206	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1207	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1208	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1209	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1210	ECUV1E103KBV	C CHIP 25V 0.01UF	
C1211	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1212	ECUV1C104KBV	C CHIP 16V 0.1UF	
C1213	ECUV1E103KBV	C CHIP 25V 0.01UF	
C9003	ECST0JY475	TANTALUM CHIP 6.3V 4.7UF	
C9007	ECUV1A105ZFV	C CHIP 10V 1UF	
C9008	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C9009	NMA0J226MTR	ELECTROLYTIC CHIP 6.3V 22UF	
C9010	ECUV1H681KBV	C CHIP 50V 680PF	
C9011	ECUV1C104KBV	C CHIP 16V 0.1UF	
C9012	ECUV1C104KBV	C CHIP 16V 0.1UF	
C9013	VCUSJBJ225KB	C CHIP 6.3V 2.2UF	
C9014	ECUV1H152KBV	C CHIP 50V 1500PF	
C9015	ECST0JY475	TANTALUM CHIP 6.3V 4.7UF	
C9016	ECST0JY106	TANTALUM CHIP 6.3V 10UF	
C9017	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9018	ECUV1C104KBV	C CHIP 16V 0.1UF	
C9019	ECST1CY475	TANTALUM CHIP 16V 4.7UF	
C9020	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9021	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9022	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9023	VCUSQAC225KB	C CHIP 16V 2.2UF	
C9024	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9025	ECUV1H151JCV	C CHIP 50V 150PF	
C9026	ECUV1C225ZFN	C CHIP 16V 2.2UF	
C9027	ECUV1C104KBV	C CHIP 16V 0.1UF	
C9028	VCUSQBC105KB	C CHIP 16V 1UF	
C9029	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C9031	ECST0JY106	TANTALUM CHIP 6.3V 10UF	
C9032	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C9050	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C9051	ECUV1A106KBP	C CHIP 10V 10UF	
C9052	ECHU1H273JB5	POLYESTER CHIP 50V 0.027UF	
C9053	LSCUCAD150J	C CHIP 2KV 15PF	
C9054	ECUV1C104ZFV	C CHIP 16V 0.1UF	
C9055	LSCUCAD180J	C CHIP 2KV 18PF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1201	VLQ0319K100	COIL CHIP 10UH	
L1202	ELJFA150KF2	COIL 15UH	
L1203	LSLQK05S100M	CHOKE COIL 10UH	
L9001	VLQ0426J150	COIL CHIP 15UH	
L9003	VLQ0426J150	COIL CHIP 15UH	
L9004	VLQ0426J150	COIL CHIP 15UH	
L9005	VLQ0426J150	COIL CHIP 15UH	
L9006	VLQ0426J150	COIL CHIP 15UH	
L9007	VLQ0426J150	COIL CHIP 15UH	
L9051	SLF6028T680M	CHOKE COIL 68UH	⚠
FP1201	LSJSQG22DG	CONNECTOR 22P	
FP9001	LSJSRF24DG	CONNECTOR 24P	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
PR9051	LSSF003C10T	FUSE 32V 1A	
PR9051	LSSF007C10T	FUSE 32V 1A	

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T9051	ETJ11K114AM	TRANSFORMERS	⚠

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
706	VMZW0668	INSULATION SHEET,PLASTIC	

13.3.7. RELAY C.B.A.

(Model: C, D, DA, E, EA, F, FA, G, GA, H, HA, I, IA, J, JA, K, KA, L, LA, M, MA)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	GA	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

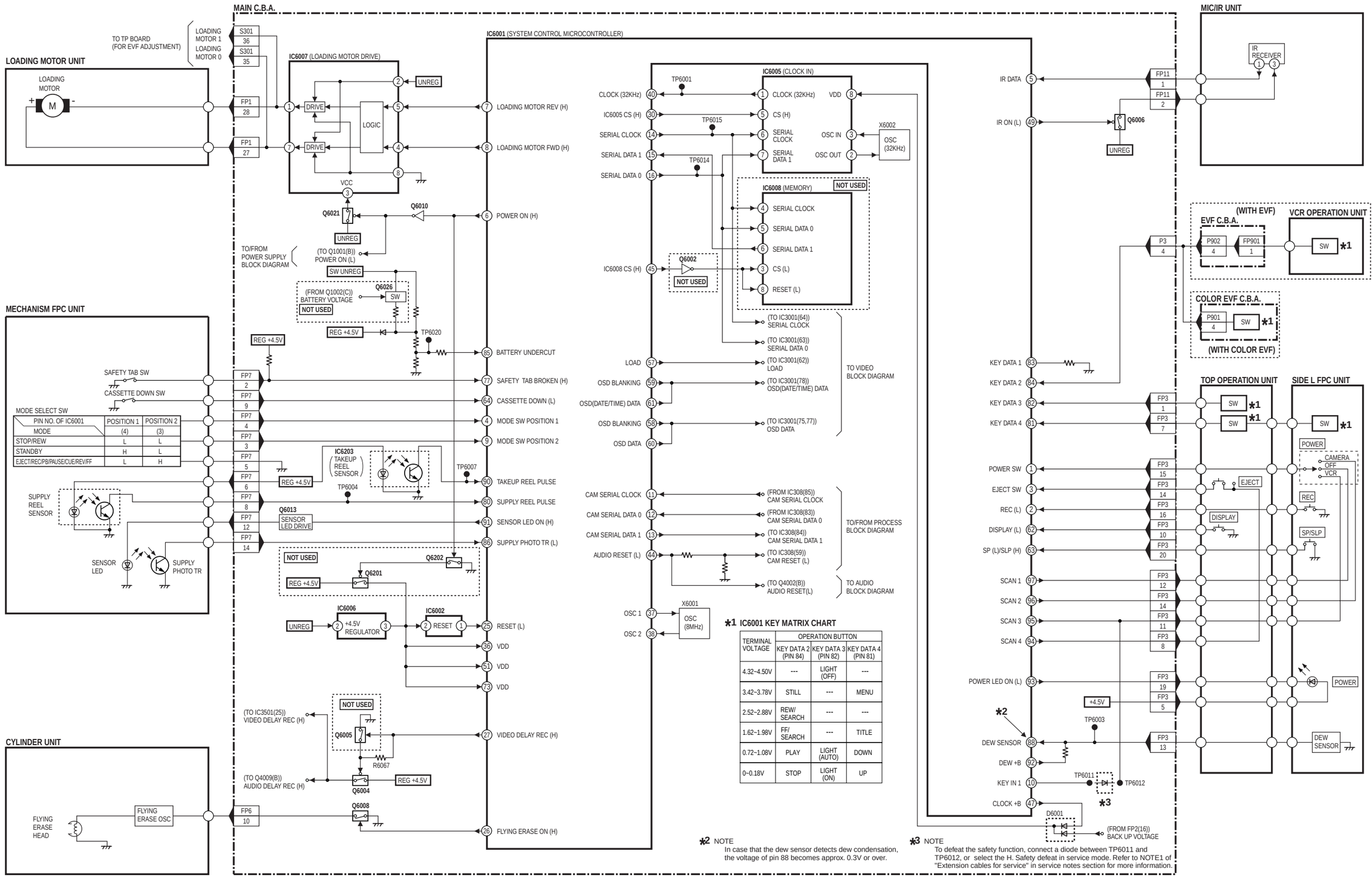
RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R9002	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R9003	ERJ3GEYJ683V	MGF CHIP 1/16W 68K	
R9004	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
FP9001	LSJS05AA022	CONNECTOR 22P	
FP9002	LSJSRF24DG	CONNECTOR 24P	

SYSTEM CONTROL BLOCK DIAGRAM



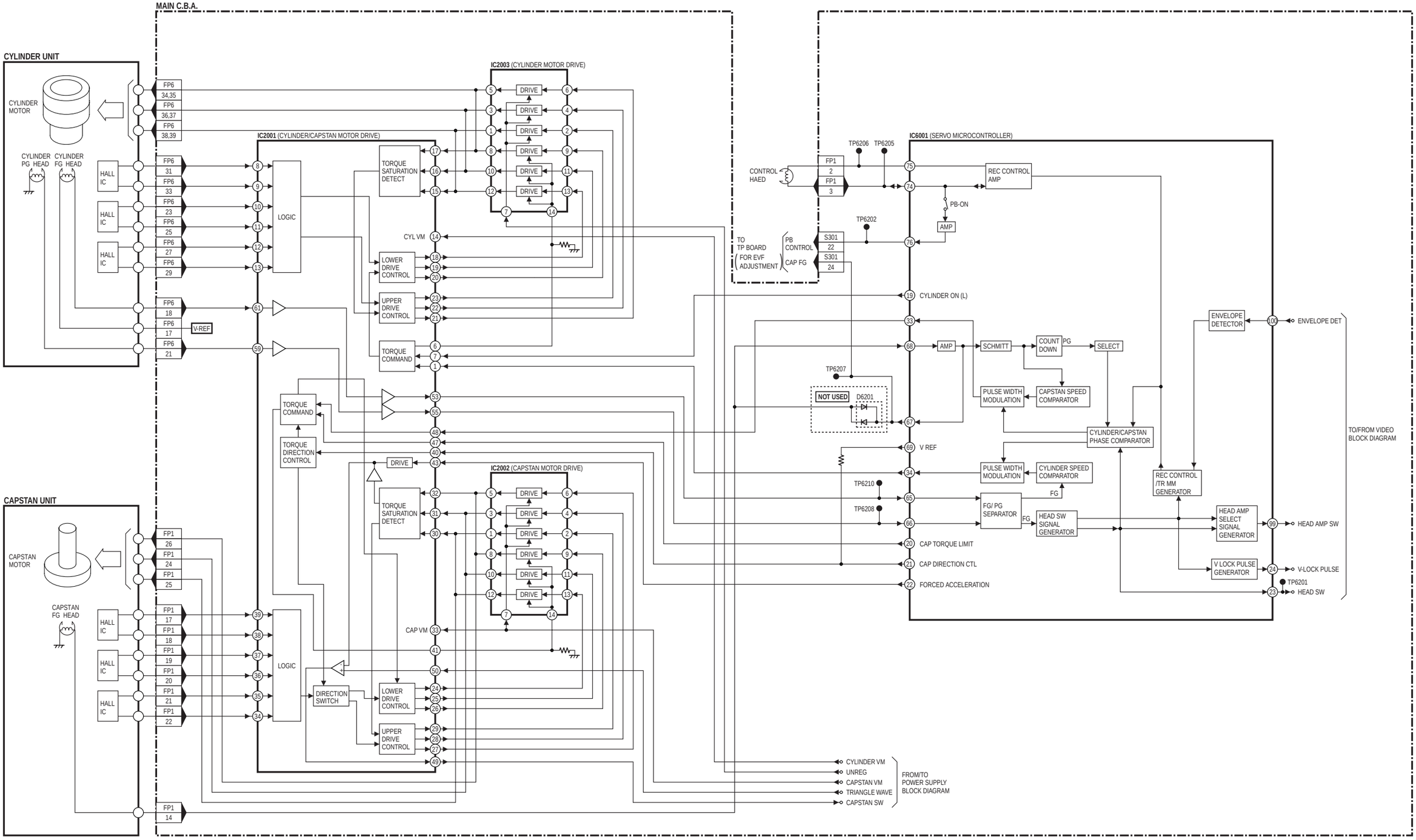
***1 IC6001 KEY MATRIX CHART**

TERMINAL VOLTAGE	OPERATION BUTTON		
	KEY DATA 2 (PIN 84)	KEY DATA 3 (PIN 82)	KEY DATA 4 (PIN 81)
4.32~4.50V	---	LIGHT (OFF)	---
3.42~3.78V	STILL	---	MENU
2.52~2.88V	REW/ SEARCH	---	---
1.62~1.98V	FF/ SEARCH	---	TITLE
0.72~1.08V	PLAY	LIGHT (AUTO)	DOWN
0~0.18V	STOP	LIGHT (ON)	UP

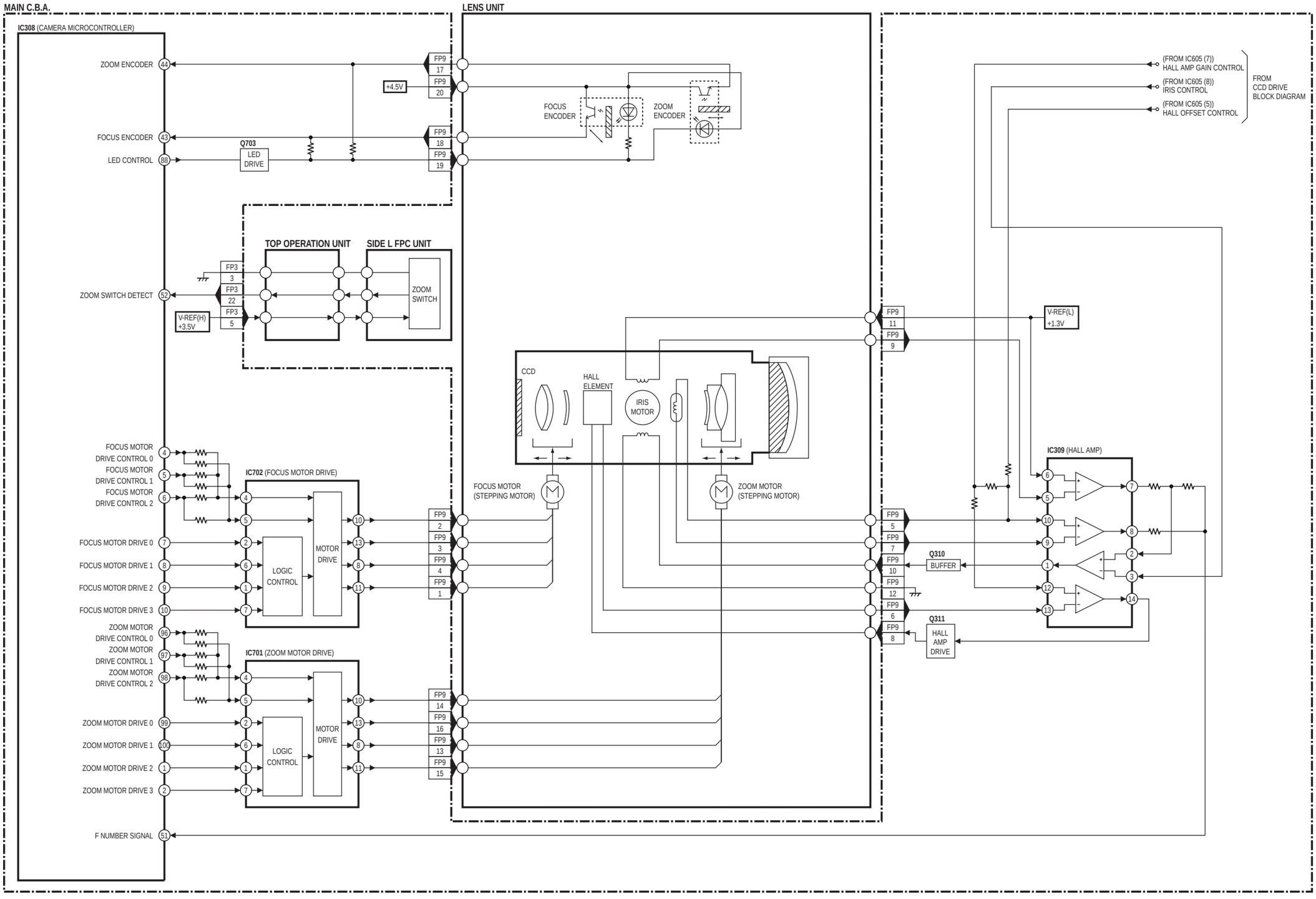
***2** NOTE
In case that the dew sensor detects dew condensation, the voltage of pin 88 becomes approx. 0.3V or over.

***3** NOTE
To defeat the safety function, connect a diode between TP6011 and TP6012, or select the H. Safety defeat in service mode. Refer to NOTE1 of "Extension cables for service" in service notes section for more information.

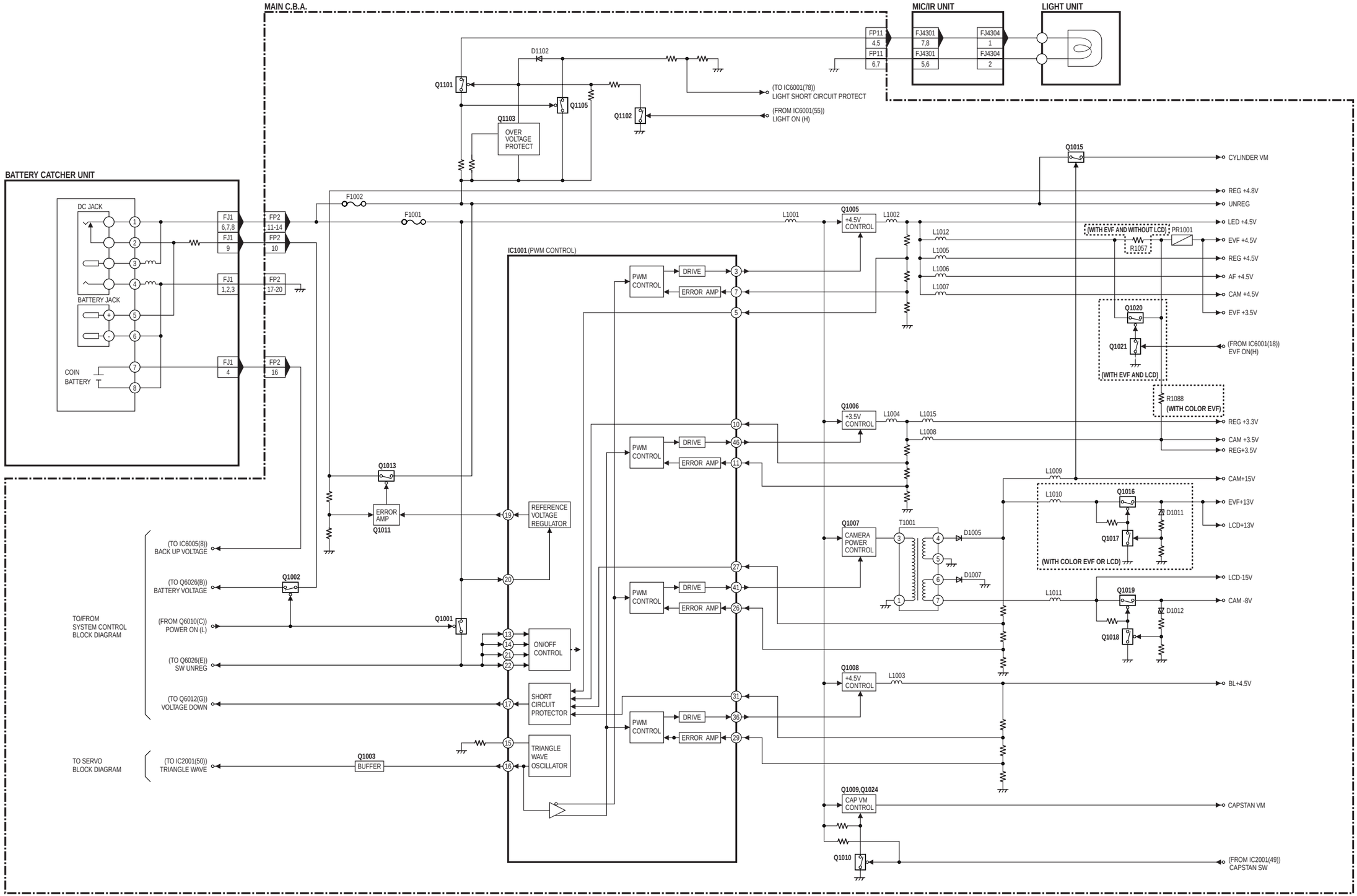
SERVO BLOCK DIAGRAM



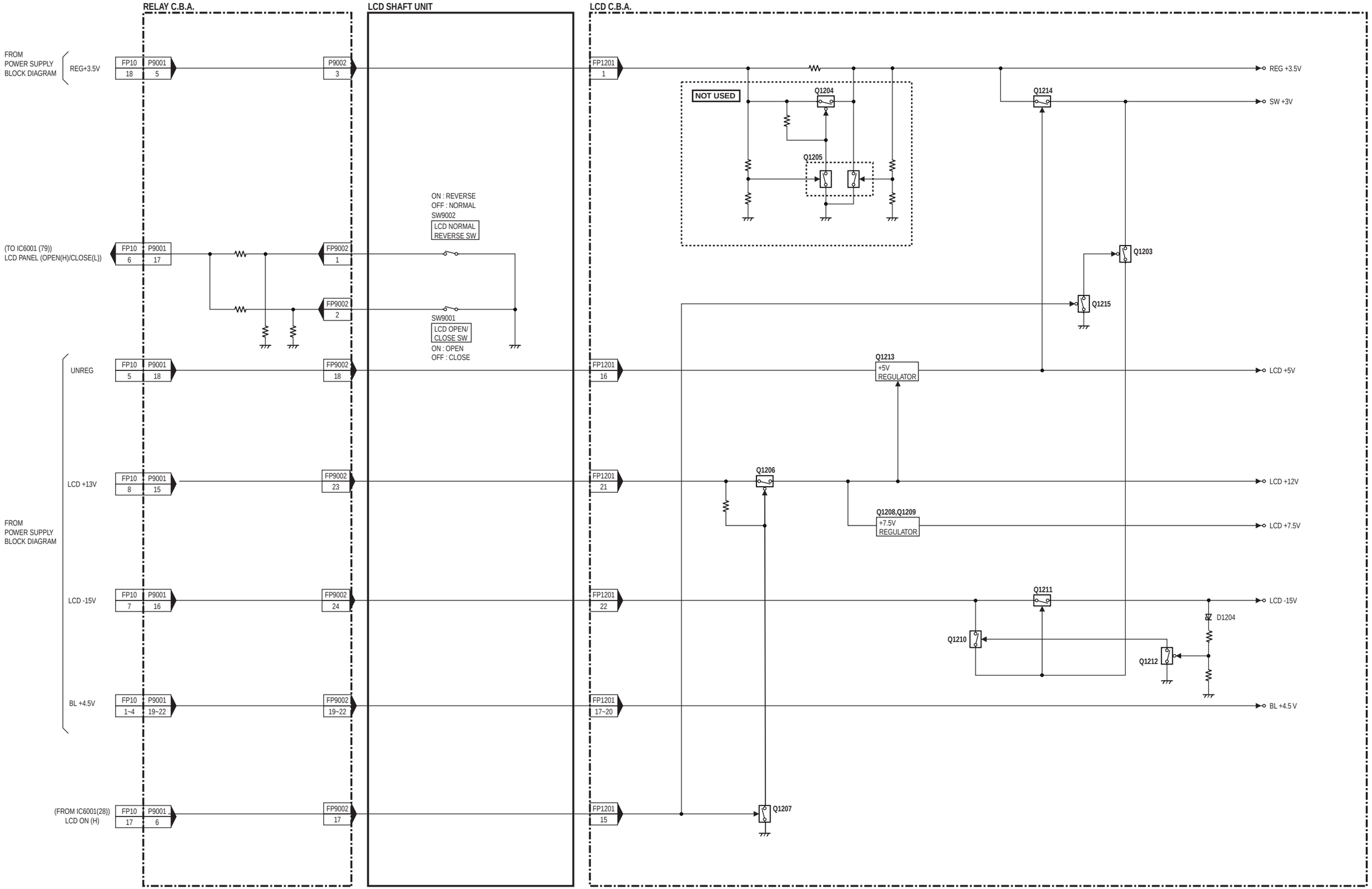
AF BLOCK DIAGRAM



POWER SUPPLY BLOCK DIAGRAM



LCD POWER BLOCK DIAGRAM

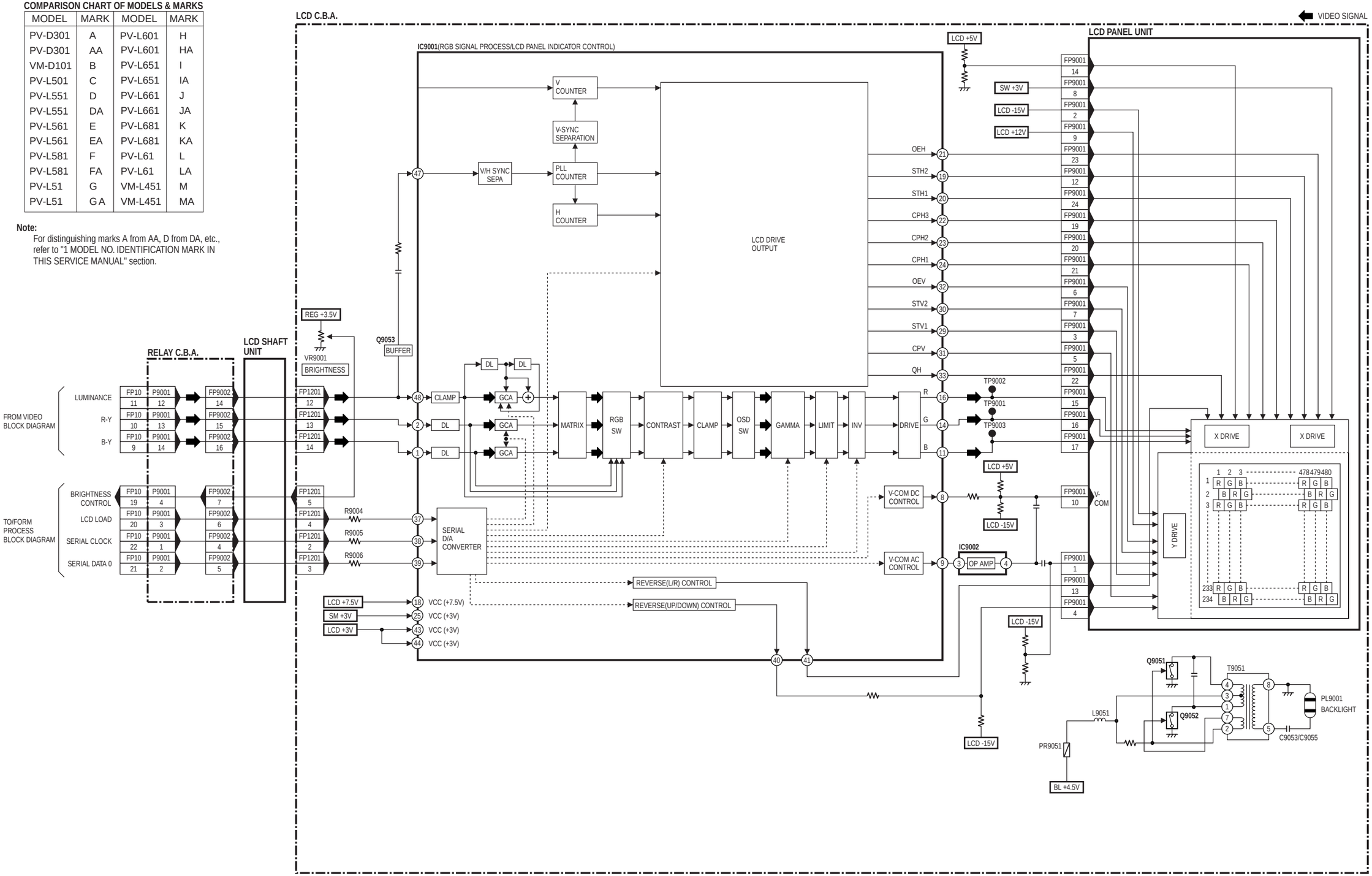


LCD BLOCK DIAGRAM (C, D, DA, E, EA, F, FA, G, GA)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	G A	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

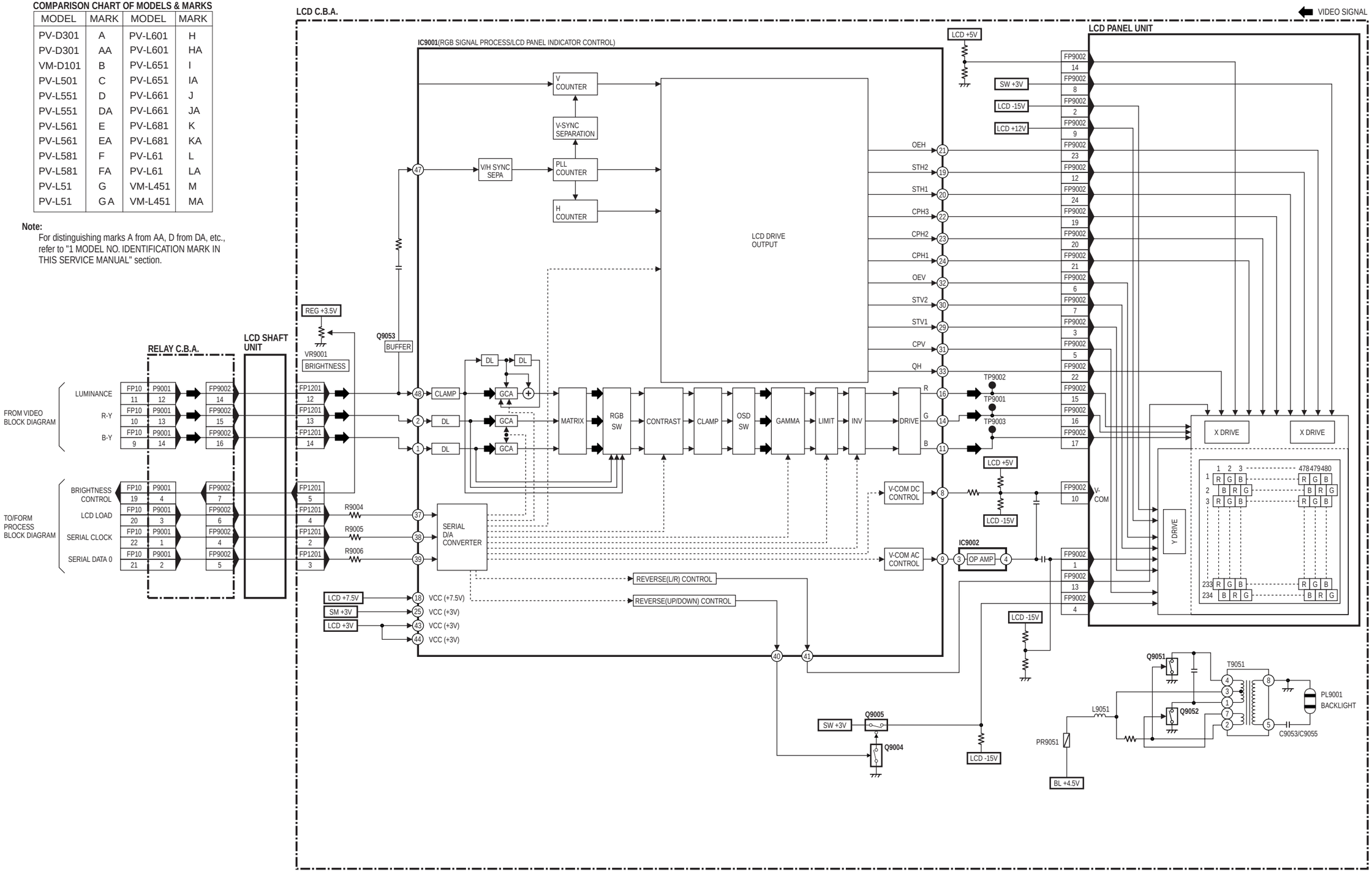


LCD BLOCK DIAGRAM (H, HA, M, MA)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	G A	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

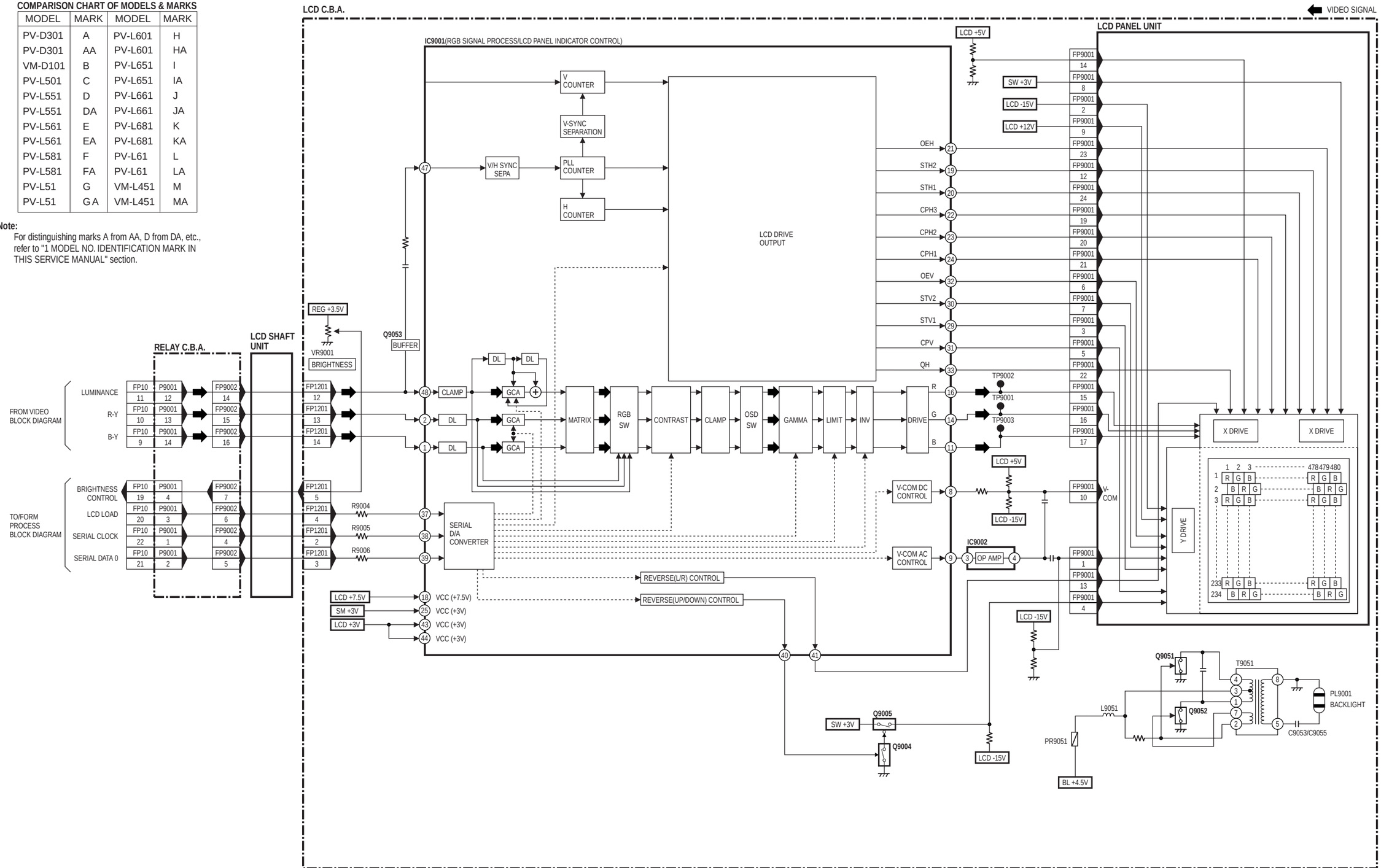


LCD BLOCK DIAGRAM (I, IA, J, JA, K, KA, L, LA)

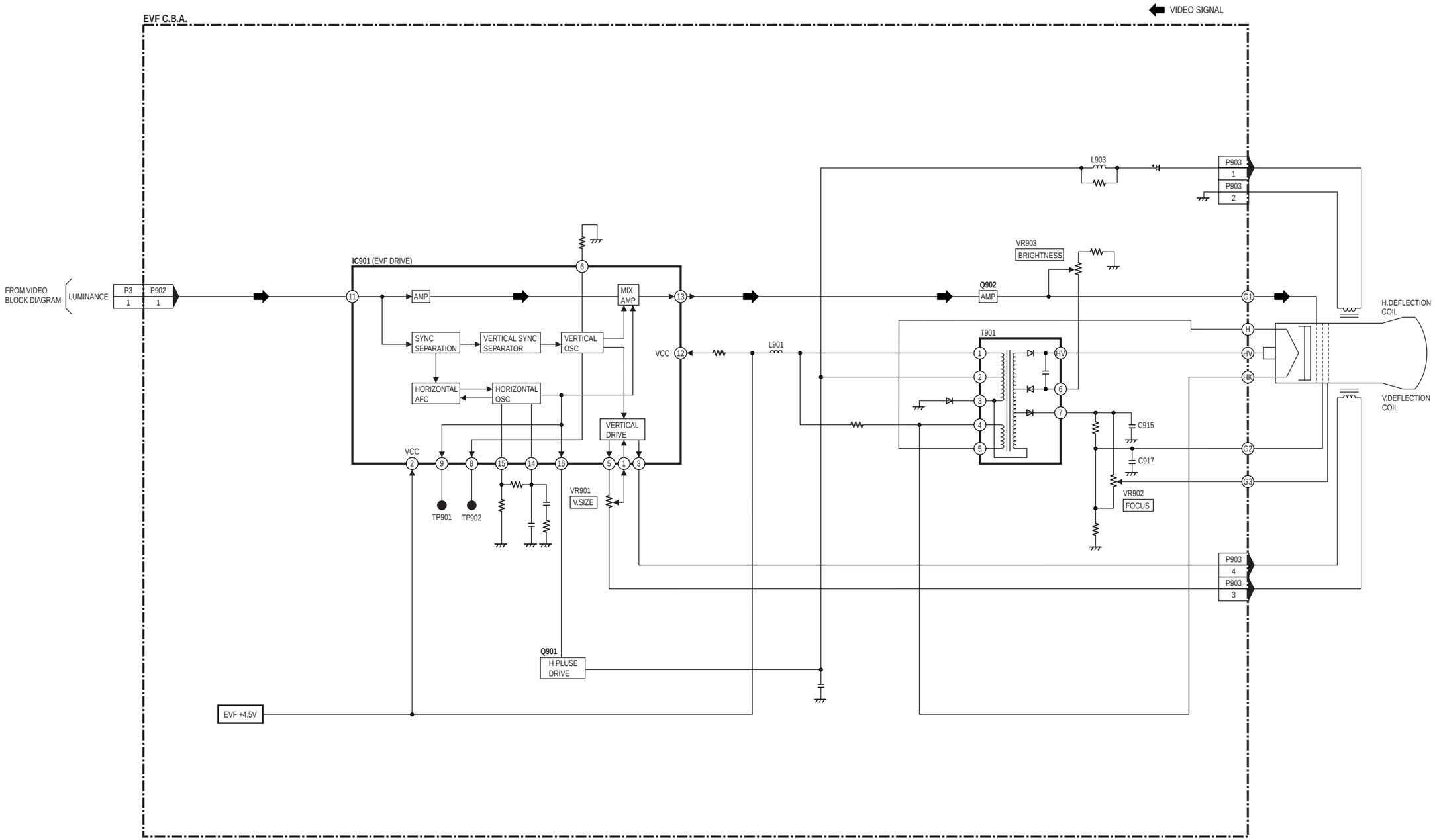
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	G A	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.



EVF BLOCK DIAGRAM

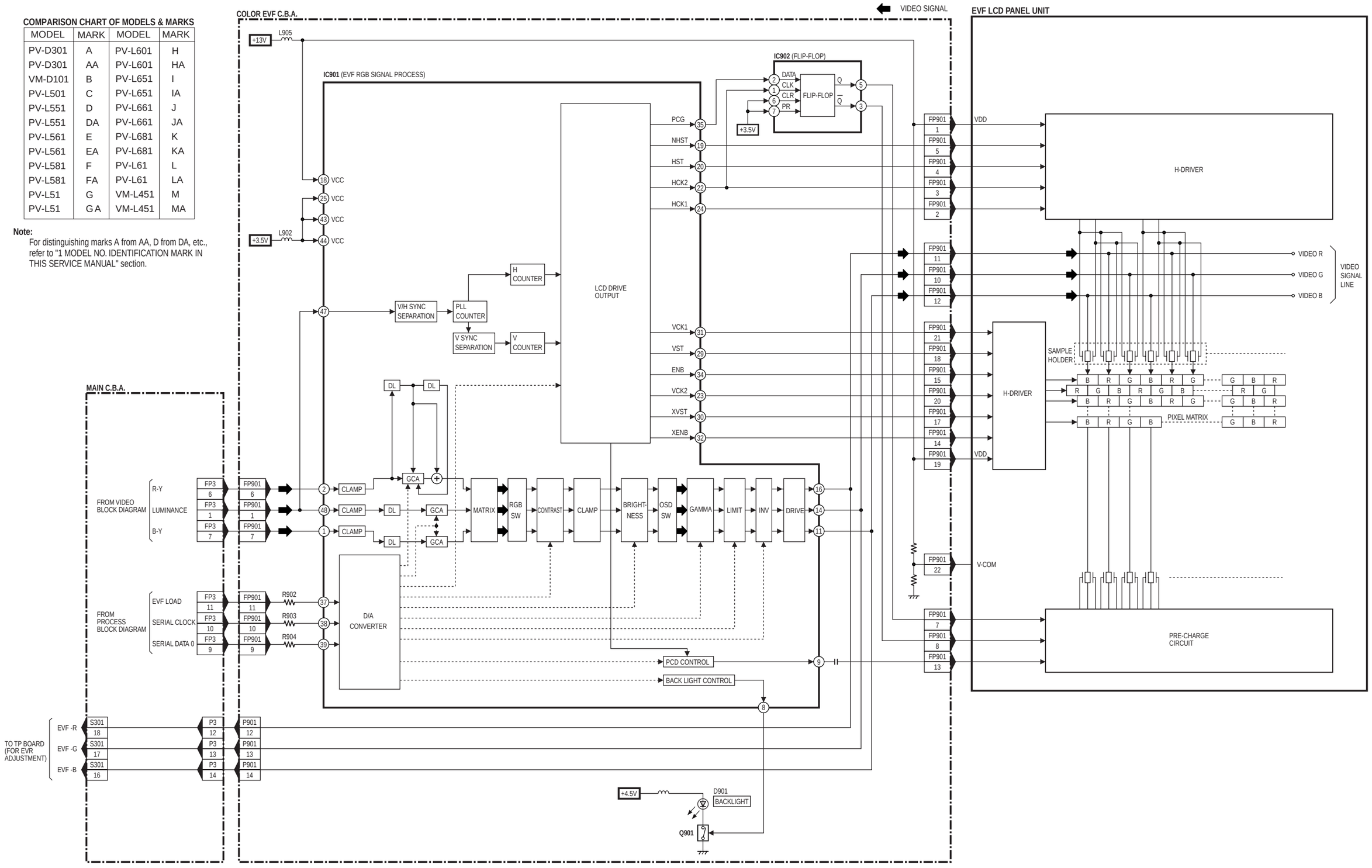


COLOR EVF BLOCK DIAGRAM (A, D, E, F, G, H, I, J, K, L, M)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	G A	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

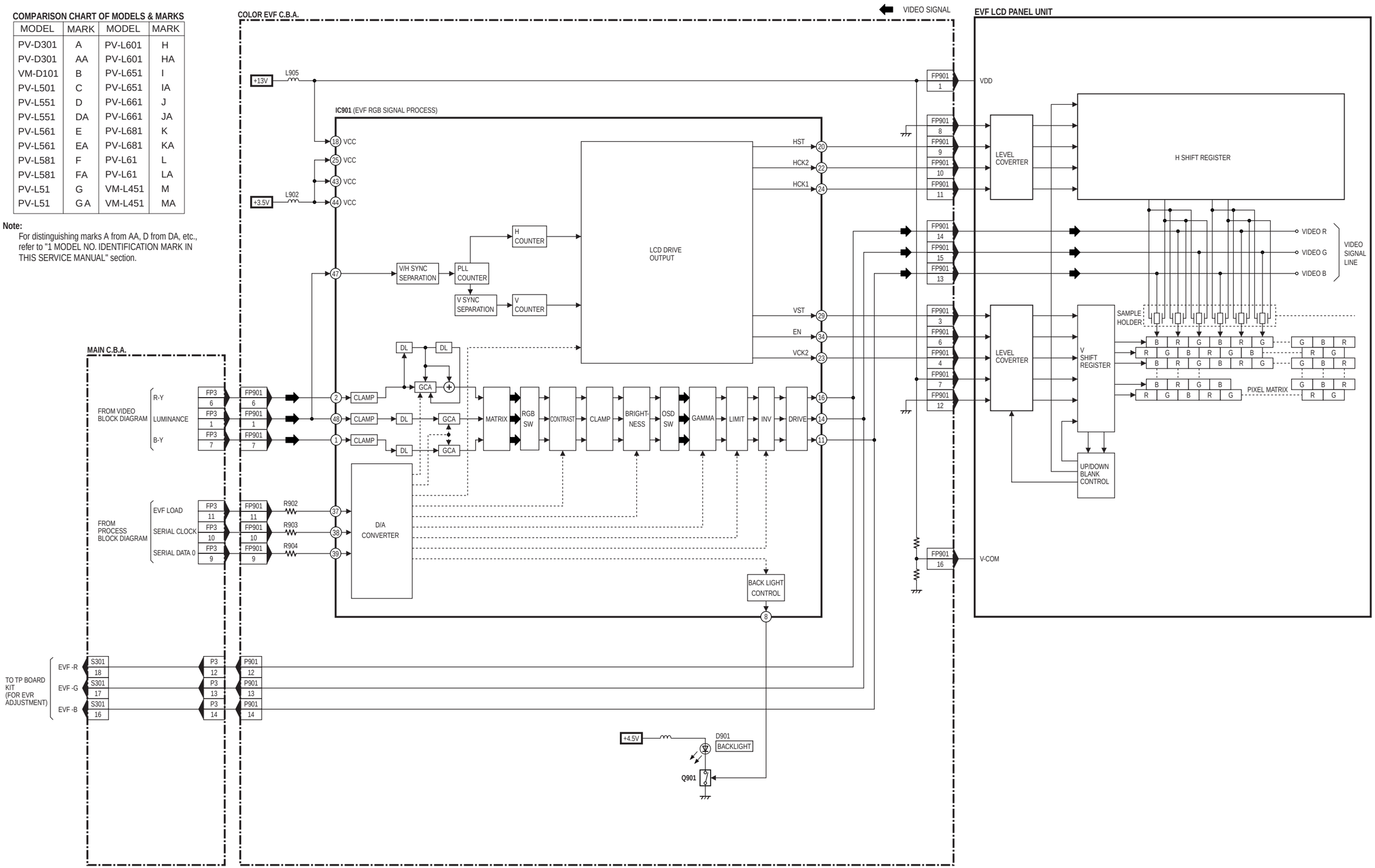


COLOR EVF BLOCK DIAGRAM (AA, DA, EA, FA, GA, HA, IA, JA, KA, LA, MA)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	H
PV-D301	AA	PV-L601	HA
VM-D101	B	PV-L651	I
PV-L501	C	PV-L651	IA
PV-L551	D	PV-L661	J
PV-L551	DA	PV-L661	JA
PV-L561	E	PV-L681	K
PV-L561	EA	PV-L681	KA
PV-L581	F	PV-L61	L
PV-L581	FA	PV-L61	LA
PV-L51	G	VM-L451	M
PV-L51	G A	VM-L451	MA

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.



MAIN C.B.A. **LSEP8069G1 (A, AA) / LSEP8069F1 (B) / LSEP8069H1 (C) / LSEP8069A1 (D, DA) / LSEP8069L1 (E, EA) / LSEP8069J1 (F, FA) / LSEP8069N1 (G, GA) / LSEP8069B1 (H, HA) / LSEP8069C1 (I, IA) / LSEP8069M1 (J,JA) / LSEP8069K1 (K, KA) / LSEP8069P1 (L, LA) / LSEP8069E1 (M, MA)**

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.5A 63V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.5A 63V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 2.5A 63V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 2.5A 63V

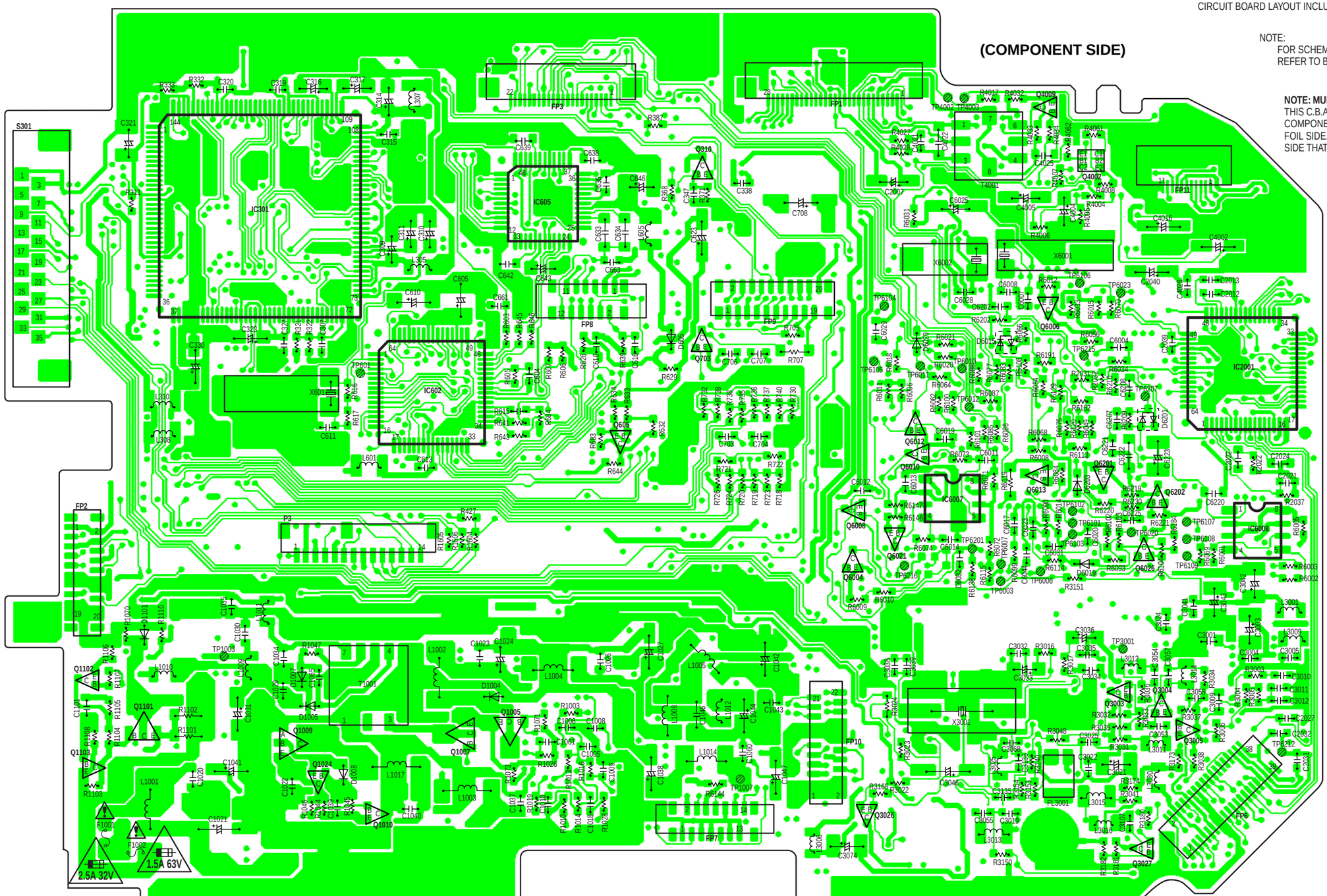
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

(COMPONENT SIDE)



NOTE: MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT PATETRNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	HA
PV-D301	AA	PV-L651	I
VM-D101	B	PV-L651	IA
PV-L501	C	PV-L661	J
PV-L551	D	PV-L661	JA
PV-L551	DA	PV-L681	K
PV-L561	E	PV-L681	KA
PV-L561	EA	PV-L61	L
PV-L581	F	PV-L61	LA
PV-L581	FA	VM-L451	M
PV-L51	G	VM-L451	MA
PV-L51	G A		
PV-L601	H		

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

LSJB8069

MAIN C.B.A. **LSEP8069G1 (A, AA) / LSEP8069F1 (B) / LSEP8069H1 (C) / LSEP8069A1 (D, DA) / LSEP8069L1 (E, EA) / LSEP8069J1 (F, FA) / LSEP8069N1 (G, GA) / LSEP8069B1 (H, HA) / LSEP8069C1 (I, IA) / LSEP8069M1 (J,JA) / LSEP8069K1 (K, KA) / LSEP8069P1 (L, LA) / LSEP8069E1 (M, MA)**

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

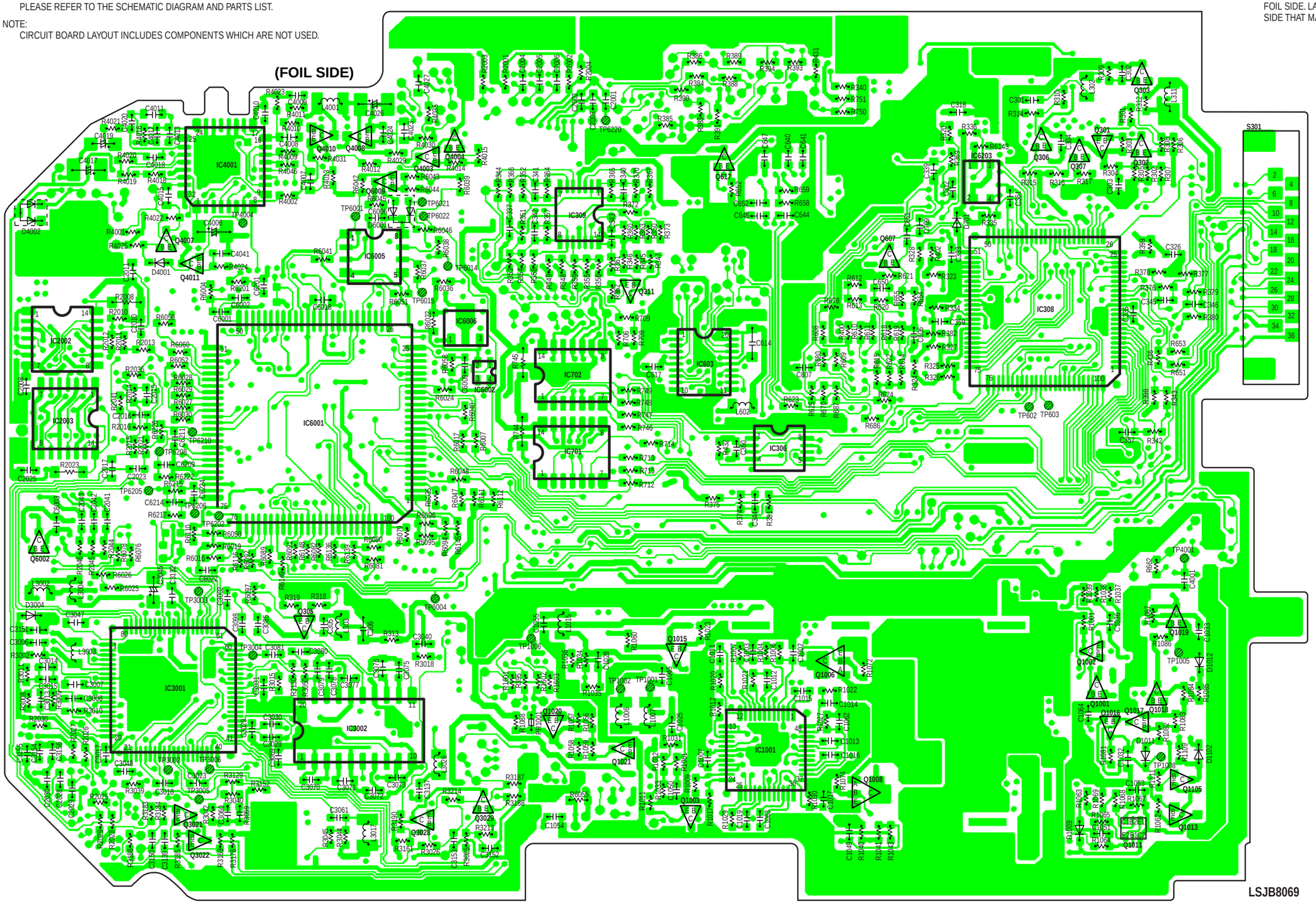
NOTE: MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT PATETRNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	HA
PV-D301	AA	PV-L651	I
VM-D101	B	PV-L651	IA
PV-L501	C	PV-L661	J
PV-L551	D	PV-L661	JA
PV-L551	DA	PV-L681	K
PV-L561	E	PV-L681	KA
PV-L561	EA	PV-L61	L
PV-L581	F	PV-L61	LA
PV-L581	FA	VM-L451	M
PV-L51	G	VM-L451	MA
PV-L51	GA		
PV-L601	H		

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

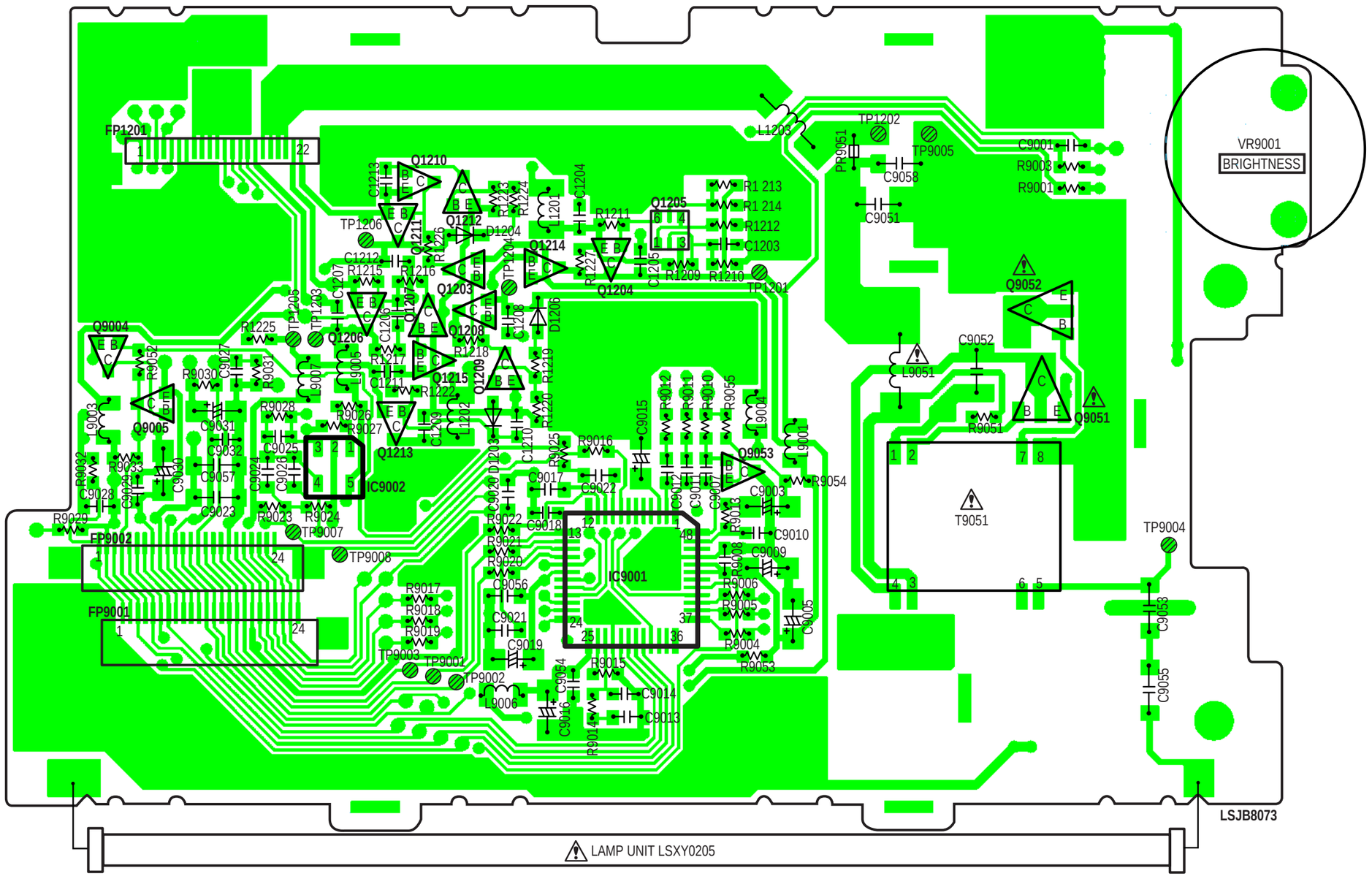
(FOIL SIDE)



LCD C.B.A. LSEP8073A1 (C, D, DA, E, EA, F, FA,G, GA) / LSEP8073B1 (H, HA, M, MA)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.



(DUAL PATTERNS)

COMPARISON CHART OF MODELS & MARKS

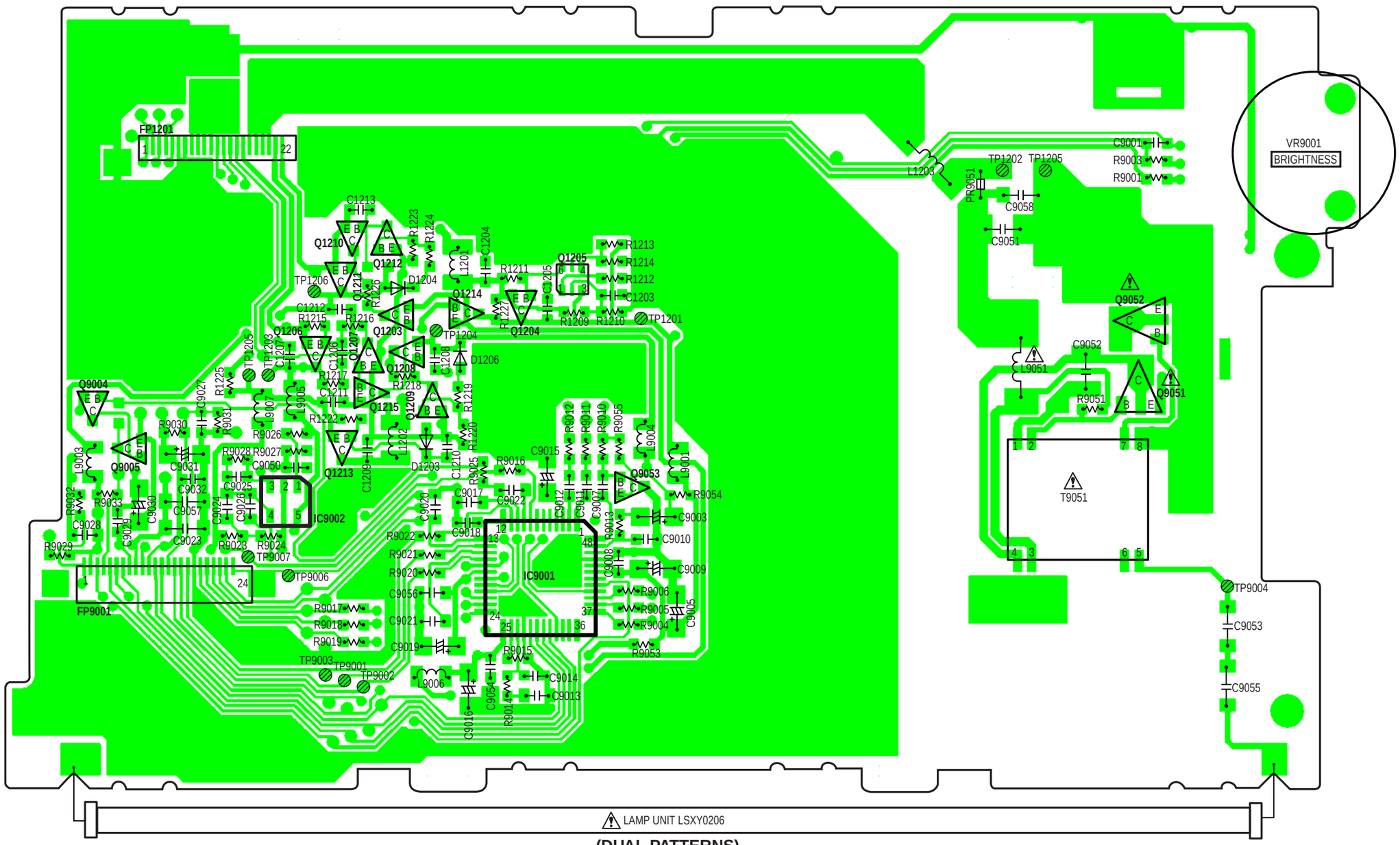
MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	HA
PV-D301	AA	PV-L651	I
VM-D101	B	PV-L651	IA
PV-L501	C	PV-L661	J
PV-L551	D	PV-L661	JA
PV-L551	DA	PV-L681	K
PV-L561	E	PV-L681	KA
PV-L561	EA	PV-L61	L
PV-L581	F	PV-L61	LA
PV-L581	FA	VM-L451	M
PV-L51	G	VM-L451	MA
PV-L51	GA		
PV-L601	H		

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

LCD C.B.A. LSEP8074A1 (I, IA, J, JA, K, KA, L, LA)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.



(DUAL PATTERNS)

LSJB8074

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	HA
PV-D301	AA	PV-L651	I
VM-D101	B	PV-L651	IA
PV-L501	C	PV-L661	J
PV-L551	D	PV-L661	JA
PV-L551	DA	PV-L681	K
PV-L561	E	PV-L681	KA
PV-L561	EA	PV-L61	L
PV-L581	F	PV-L61	LA
PV-L581	FA	VM-L451	M
PV-L51	G	VM-L451	MA
PV-L51	GA		
PV-L601	H		

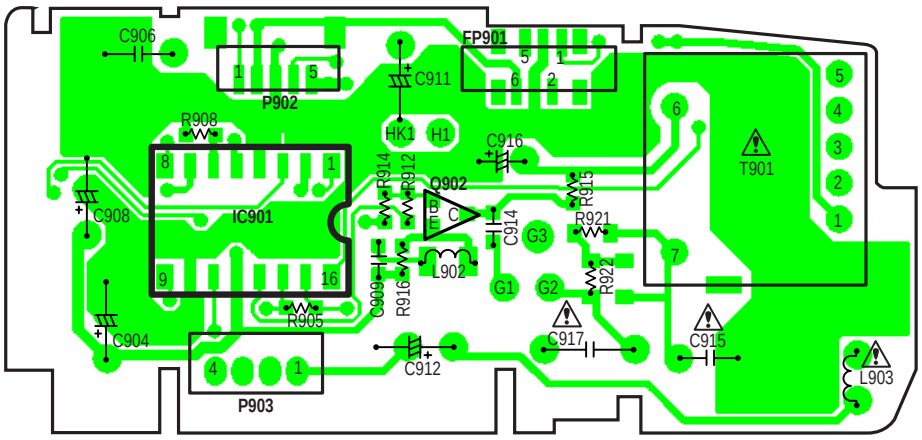
Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

EVF C.B.A. LSEQ0598 (B, C)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

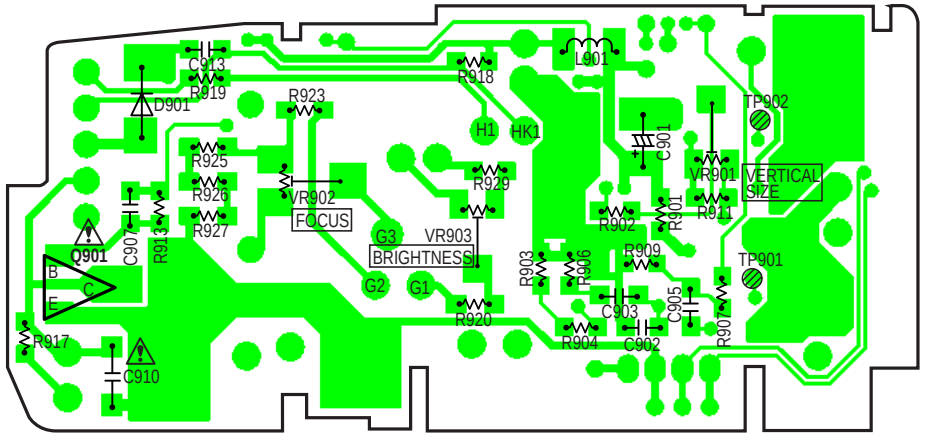
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

(COMPONENT SIDE)



(DUAL PATTERNS)

(FOIL SIDE)



(DUAL PATTERNS)

LSJB8081

COMPARISON CHART OF MODELS & MARKS

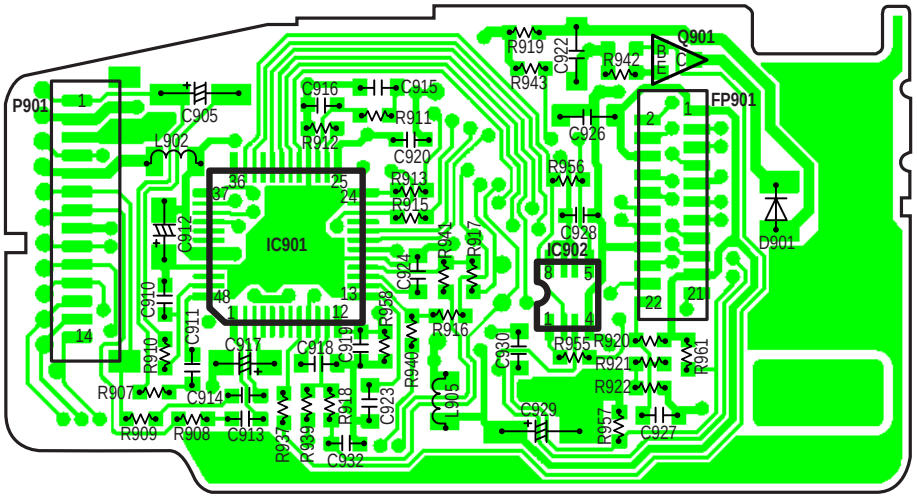
MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	HA
PV-D301	AA	PV-L651	I
VM-D101	B	PV-L651	IA
PV-L501	C	PV-L661	J
PV-L551	D	PV-L661	JA
PV-L551	DA	PV-L681	K
PV-L561	E	PV-L681	KA
PV-L561	EA	PV-L61	L
PV-L581	F	PV-L61	LA
PV-L581	FA	VM-L451	M
PV-L51	G	VM-L451	MA
PV-L51	GA		
PV-L601	H		

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COLOR EVF C.B.A. LSEP8113A1 (A,D,E,F,G,H,I,J,K,L,M)

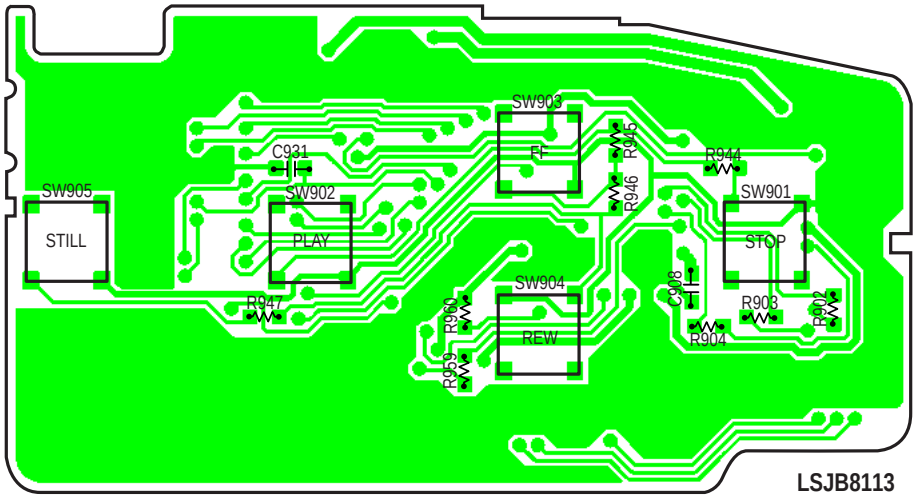
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

(COMPONENT SIDE)



(DUAL PATTERNS)

(FOIL SIDE)



LSJB8113

(DUAL PATTERNS)

COMPARISON CHART OF MODELS & MARKS

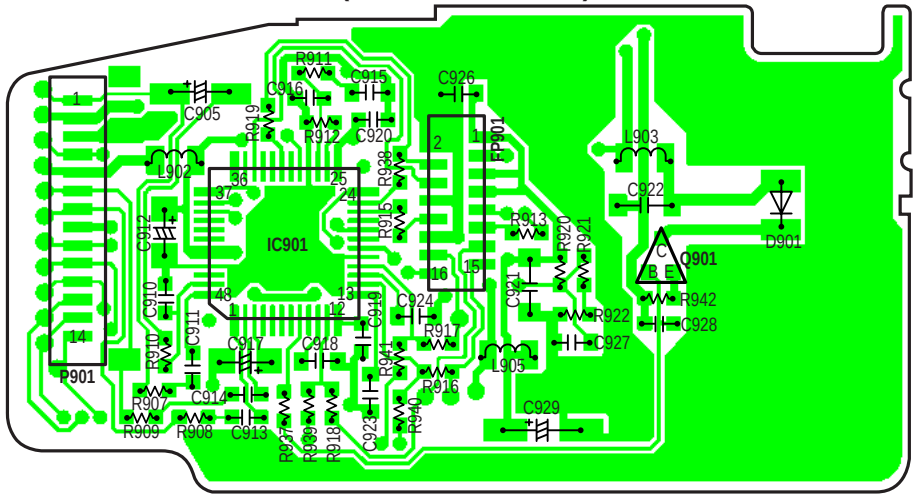
MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	HA
PV-D301	AA	PV-L651	I
VM-D101	B	PV-L651	IA
PV-L501	C	PV-L661	J
PV-L551	D	PV-L661	JA
PV-L551	DA	PV-L681	K
PV-L561	E	PV-L681	KA
PV-L561	EA	PV-L61	L
PV-L581	F	PV-L61	LA
PV-L581	FA	VM-L451	M
PV-L51	G	VM-L451	MA
PV-L51	G A		
PV-L601	H		

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COLOR EVF C.B.A. LSEP8077A1 (AA,DA,EA,FA,GA,HA,IA,JA,KA,LA,MA)

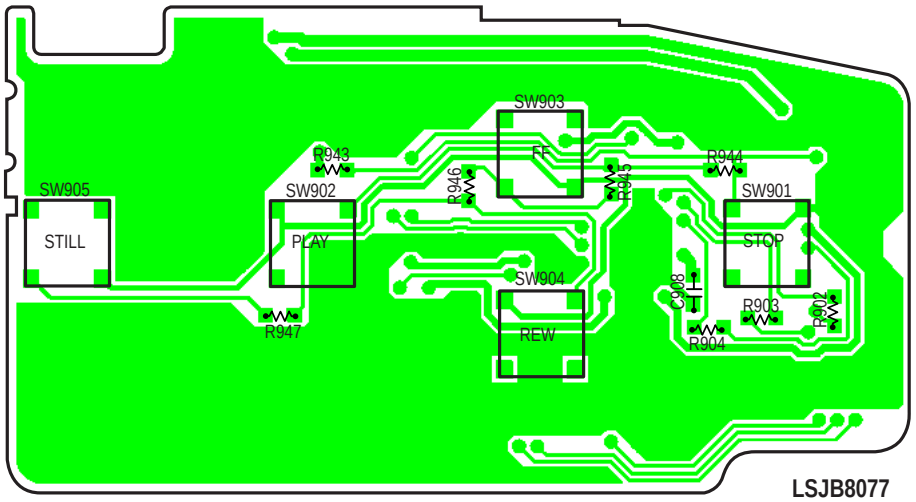
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

(COMPONENT SIDE)



(DUAL PATTERNS)

(FOIL SIDE)



(DUAL PATTERNS)

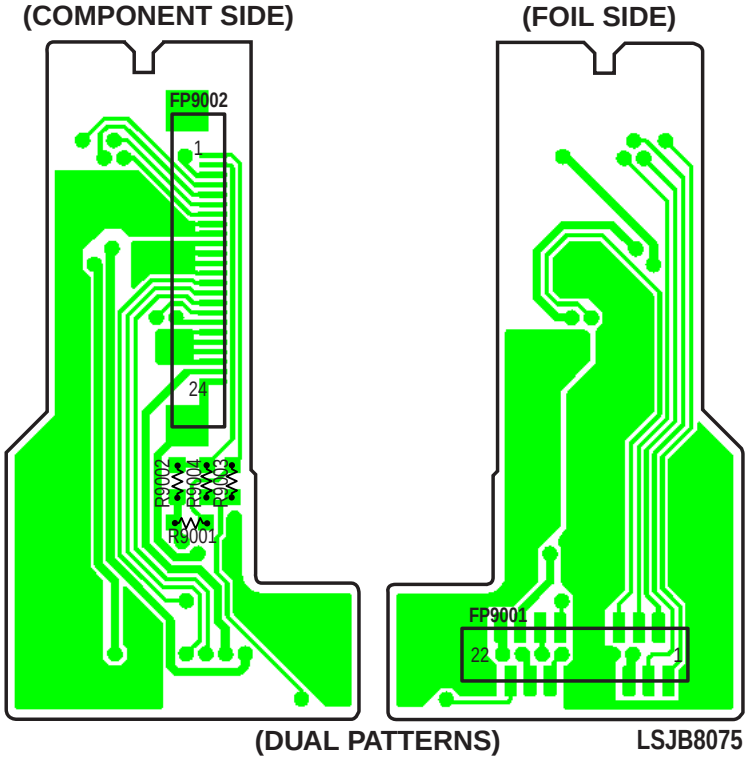
LSJB8077

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	HA
PV-D301	AA	PV-L651	I
VM-D101	B	PV-L651	IA
PV-L501	C	PV-L661	J
PV-L551	D	PV-L661	JA
PV-L551	DA	PV-L681	K
PV-L561	E	PV-L681	KA
PV-L561	EA	PV-L61	L
PV-L581	F	PV-L61	LA
PV-L581	FA	VM-L451	M
PV-L51	G	VM-L451	MA
PV-L51	G A		
PV-L601	H		

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.



COMPARISON CHART OF MODELS & MARKS

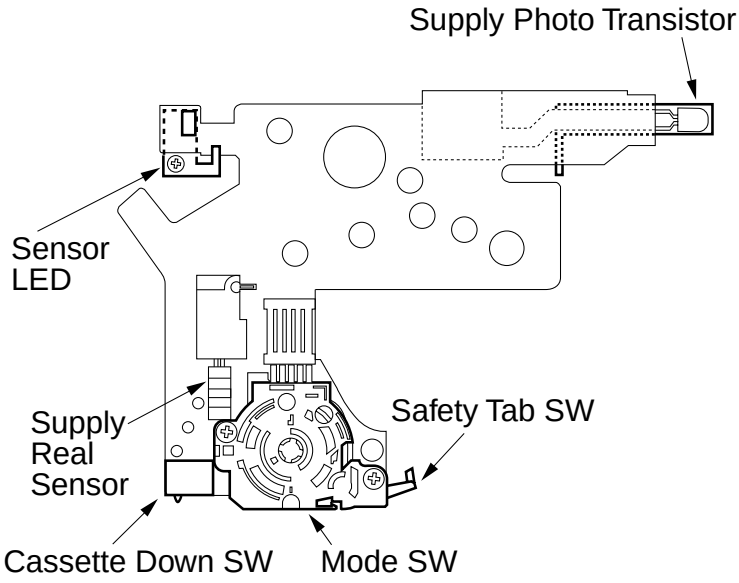
MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	HA
PV-D301	AA	PV-L651	I
VM-D101	B	PV-L651	IA
PV-L501	C	PV-L661	J
PV-L551	D	PV-L661	JA
PV-L551	DA	PV-L681	K
PV-L561	E	PV-L681	KA
PV-L561	EA	PV-L61	L
PV-L581	F	PV-L61	LA
PV-L581	FA	VM-L451	M
PV-L51	G	VM-L451	MA
PV-L51	GA		
PV-L601	H		

NOTE:
REFER TO "MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" SECTION.

MECHANISM FPC UNIT

NOTE:
MECHANISM FPC UNIT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.



MAIN I (SYSTEM CONTROL/ SERVO) SCHEMATIC DIAGRAM

✱1 NOTE
TO DEFEAT THE SAFETY FUNCTION, CONNECT A DIODE BETWEEN TP6011 AND TP6012, OR SELECT THE H. SAFETY DEFEAT IN SERVICE MODE. REFER TO NOTE1 OF "EXTENSION CABLES FOR SERVICE" IN SERVICE NOTES SECTION FOR MORE INFORMATION.

IC6001 KEY MATRIX CHART

VOLTAGE	0∽ 0.18V	0.72∽1.08V	1.62∽1.98V	2.52∽2.88V	3.42∽3.78V	4.32∽4.50V
KEY DATA 2 (PIN 84)	STOP	PLAY	FF/SEARCH	REW/ SEARCH	STILL	------
KEY DATA 3 (PIN 82)	LIGHT (ON)	LIGHT (AUTO)	------	------	------	LIGHT (OFF)
KEY DATA 4 (PIN 81)	UP	DOWN	TITLE	------	MENU	------

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

UNLESS OTHERWISE SPECIFIED,
WATTAGE OF RESISTORS IS 1/16W.

LINK TO VOLTAGE CHART
LINK TO SIGNAL WAVEFORMS

LSJB8069

MAIN II (CYLINDER/ CAPSTAN DRIVE) SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

REC AUDIO SIGNAL
PB AUDIO SIGNAL

TO MAIN I
FORCED ACCELERATION 16
CAP FG 28
CTL PULSE(-) 70
CTL PULSE(+) 69

TO MAIN VI
AUDIO HEAD 171
AUDIO HEAD 172
AUDIO HEAD 173
AUDIO ERASE HEAD 174
GND 175
GND 176
CONTROL ERASE HEAD 177

TO AUDIO CONTROL HEAD UNIT /CAPSTAN UNIT
FP1
GND 1
CONTROL HEAD(-) 2
CONTROL HEAD(+) 3
CONTROL ERASE HEAD 4
GND 5
GND 6
AUDIO ERASE HEAD 7
AUDIO HEAD 8
AUDIO HEAD 9
AUDIO HEAD 10
GND 11
GND 12
VMR 13
CAP FG(+) 14
15
VH- 16
H1+ 17
H1- 18
H2+ 19
H2- 20
H3+ 21
H3- 22
VH+ 23
MAIN COIL 2 24
MAIN COIL 3 25
MAIN COIL 1 26
LOADING MOTOR 0 27
LOADING MOTOR 1 28

TO MAIN I
LOADING MOTOR 1 136
LOADING MOTOR 0 137

TO MAIN VII
CAP SW 75
TRIANGLE WAVE 76
CAP VM 77
REG +4.5V 78

TP6220
R2001 1500
C2001 0.1
C2003 0.1
C2002 0.1
R2002 Z
C2007 22/6.3V
R2004 3300
R2003 100
C2005 Z
C2006 Z
C2004 Z
R2031 100
R2032 10K
C2010 0.068
R2011 22K
R2013 3300
R2008 0.33 1/8W
C2011 0.33
C2012 0.047
C2013 0.047
C2040 10/16V
C2008 0.033
R2010 1K
R2012 180K

IC2002
UN224-TX
CAP MOTOR DRIVE
DRIVE ×6

IC2003
UN224-TX
CYL MOTOR DRIVE
DRIVE ×6

IC2001
AN3897FH-V
CYL/CAP MOTOR DRIVE CONTROL
CAP VM
CYL VM
LOGIC
DRIVE CTL
TORQUE SATURATION DETECT
DRIVE
DIRECTION SWITCH
TORQUE DIRECTION CONTROL
TORQUE COMMAND

TP6212
C2043 Z
R2046
C2031 0.1
C2030 0.1
C2032 0.1
C2042 Z
R2045
C2041 Z
R2044
R2029 390
R2030 470
R2026 82
R2025 100
R2028 390
C2027 Z
C2028 Z
C2029 Z
R2027 470
C2025 0.01
C2024 1
C2022 0.047
R2022 220
R2023 0.33 1/8W
R2037 Z
C2021 0.047
R2041 Z
C2016 330P
R2016 680K
R2021 10K
C2023 0.1
C2015 1500P
R2014 680K
R2015 6800
C2017 1
C2039 Z
R2036 Z

TO MAIN I
2 CAP DIRECTION CTL
9 CAP TORQUE LIMIT
71 REG +4.5V
29 V-REF

TO MAIN V
153 CYL FG(+)
154 CYL FG(-)
155 CYL PG
156 MAIN COIL 2
157 VH-
158 VH+
159 VH+
160 VH+
161 VH+
162 H1-
163 H1+
164 H2-
165 H2+
166 MAIN COIL 3
167 H3-
168 VH-
169 H3+
170 MAIN COIL 1

TO MAIN VII
96 CYL VM
95 SW CYL UNREG

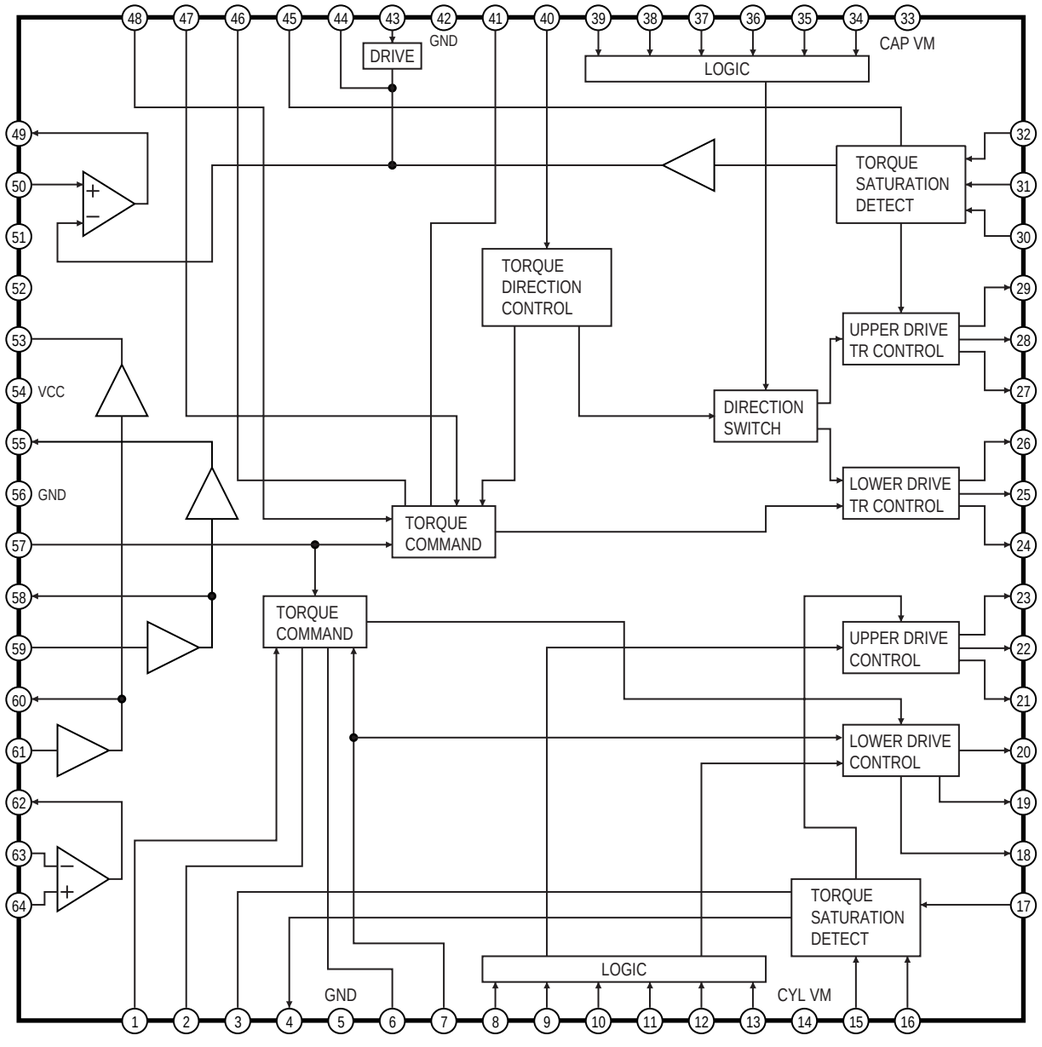
TO MAIN I
15 CYLINDER ON(L)
25 CYL SPEED ERROR
27 CYL PG
26 CYL FG
18 CAP SPEED ERROR

UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/16W.

LINK TO VOLTAGE CHART

LSJB8069

IC2001 CYLINDER/CAPSTAN MOTOR DRIVE CONTROL IC-DETAIL BLOCK DIAGRAM, AN3897FH-V



MAIN III (CAMERA I) SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

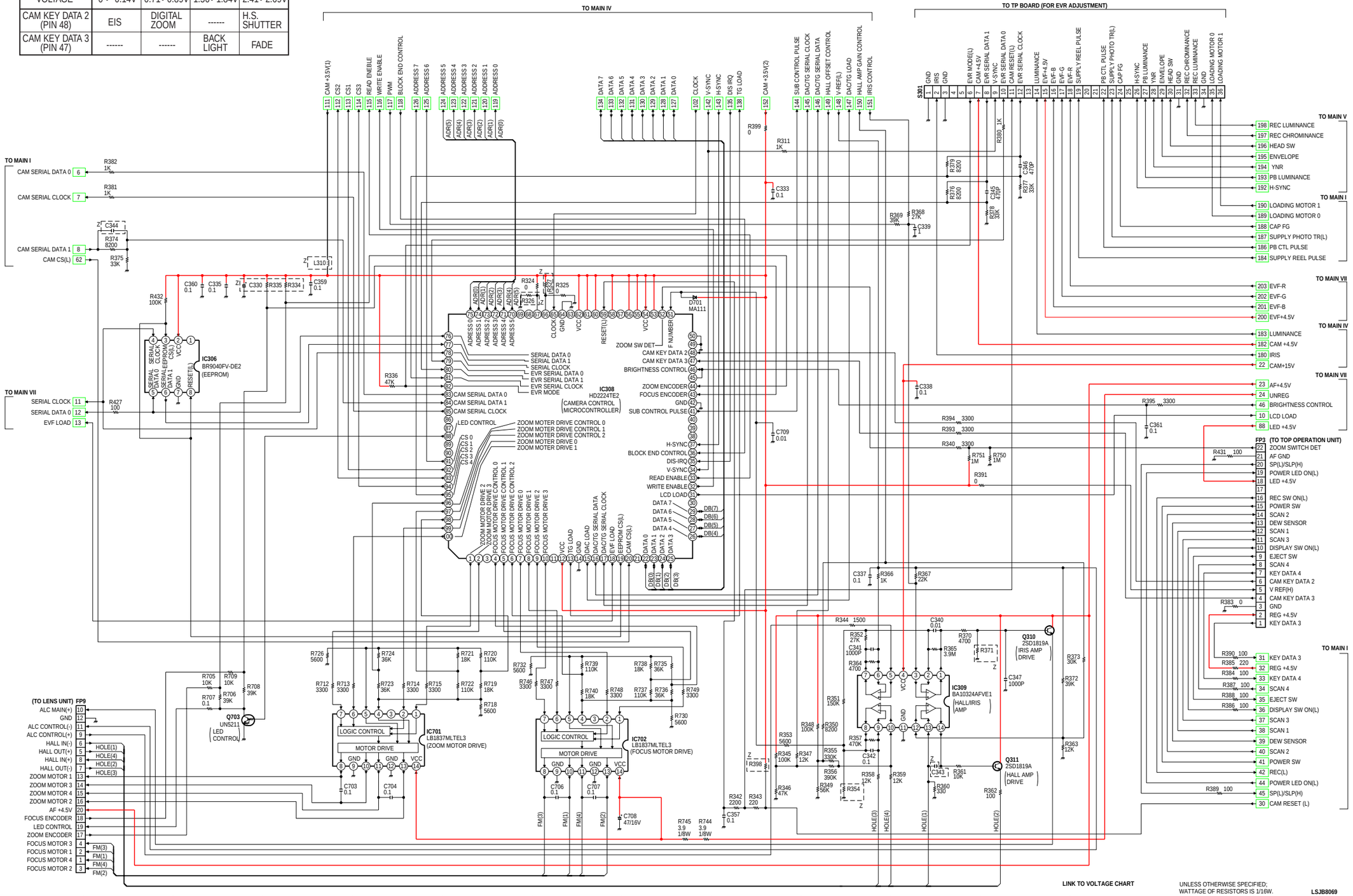
Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

IC308 KEY MATRIX CHART

VOLTAGE	0 ~ 0.14V	0.71~0.89V	1.56~1.84V	2.41~2.69V
CAM KEY DATA 2 (PIN 48)	EIS	DIGITAL ZOOM	------	H.S. SHUTTER
CAM KEY DATA 3 (PIN 47)	------	------	BACK LIGHT	FADE



MAIN IV (CAMERA II) / CCD SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

NOTE:
CCD C.B.A. IS NOT SERVICEABLE AND IS SUPPLIED AS A LENS UNIT ONLY FOR REPLACEMENT.

CCD C.B.A.
"FOR REFERENCE ONLY"

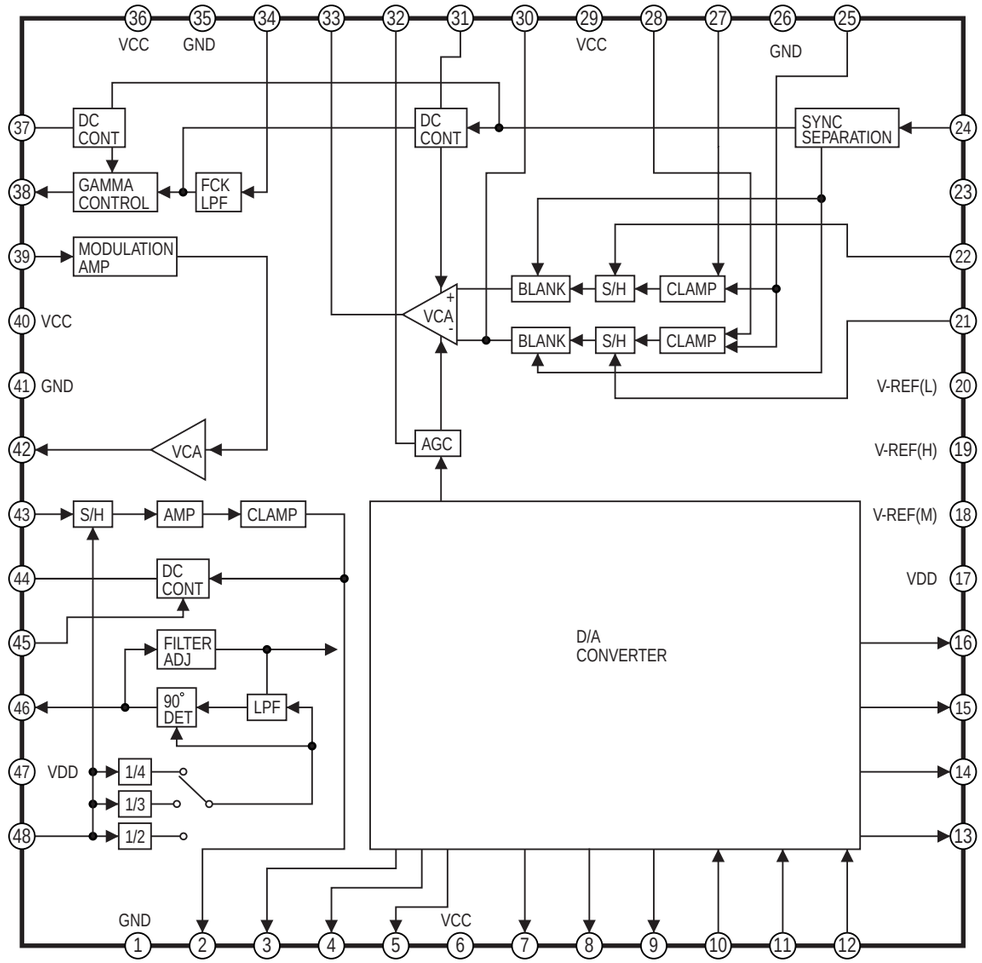
UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/16W.

LINK TO VOLTAGE CHART
LINK TO SIGNAL WAVEFORMS

LSJB8069

IC603 CCD V DRIVE IC-DETAIL BLOCK DIAGRAM, MN3112SA-E1

IC605 SAMPLING HOLD/AGC CONTROL IC-DETAIL BLOCK DIAGRAM, AN2109NFHQ



MAIN V (VIDEO) SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

REC VIDEO SIGNAL

PB VIDEO SIGNAL

UNLESS OTHERWISE SPECIFIED;
PNP TRANSISTORS IS 2SB1218A,
NPN TRANSISTORS IS 2SD1819A,
WATTAGE OF RESISTORS IS 1/16W.

TO MAIN I
V-LOCK PULSE 54
ROTARY SW 48
D/A LOAD 57
D/A SERIAL DATA 56
D/A SERIAL CLOCK 55
OSD DATA 58
OSD(DATE/TIME) DATA 59
HEAD AMP SW 49
HEAD SW 53
VIDEO DELAY REC(H) 51
FLYING ERASE ON(L) 52
VIDEO 60
ENVELOPE DET 50
ENV-VOLTAGE 47

TO MAIN VI
AUDIO EE(H) 108
AUDIO FADE CONTROL 109
SLP(H) 110

TO MAIN IV
REG +4.5V(1) 4

TO MAIN VII
REG +4.5V 93
VIDEO 94

LUMINANCE 97
R-Y 98
B-Y 99
REG +4.8V 100

TO MAIN IV
LUMINANCE 5
CHROMINANCE 3

TO MAIN III
196 HEAD SW
197 REC-CHROMINANCE
198 REC-LUMINANCE
195 ENVELOPE
193 PB LUMINANCE
194 YNR
192 H-SYNC

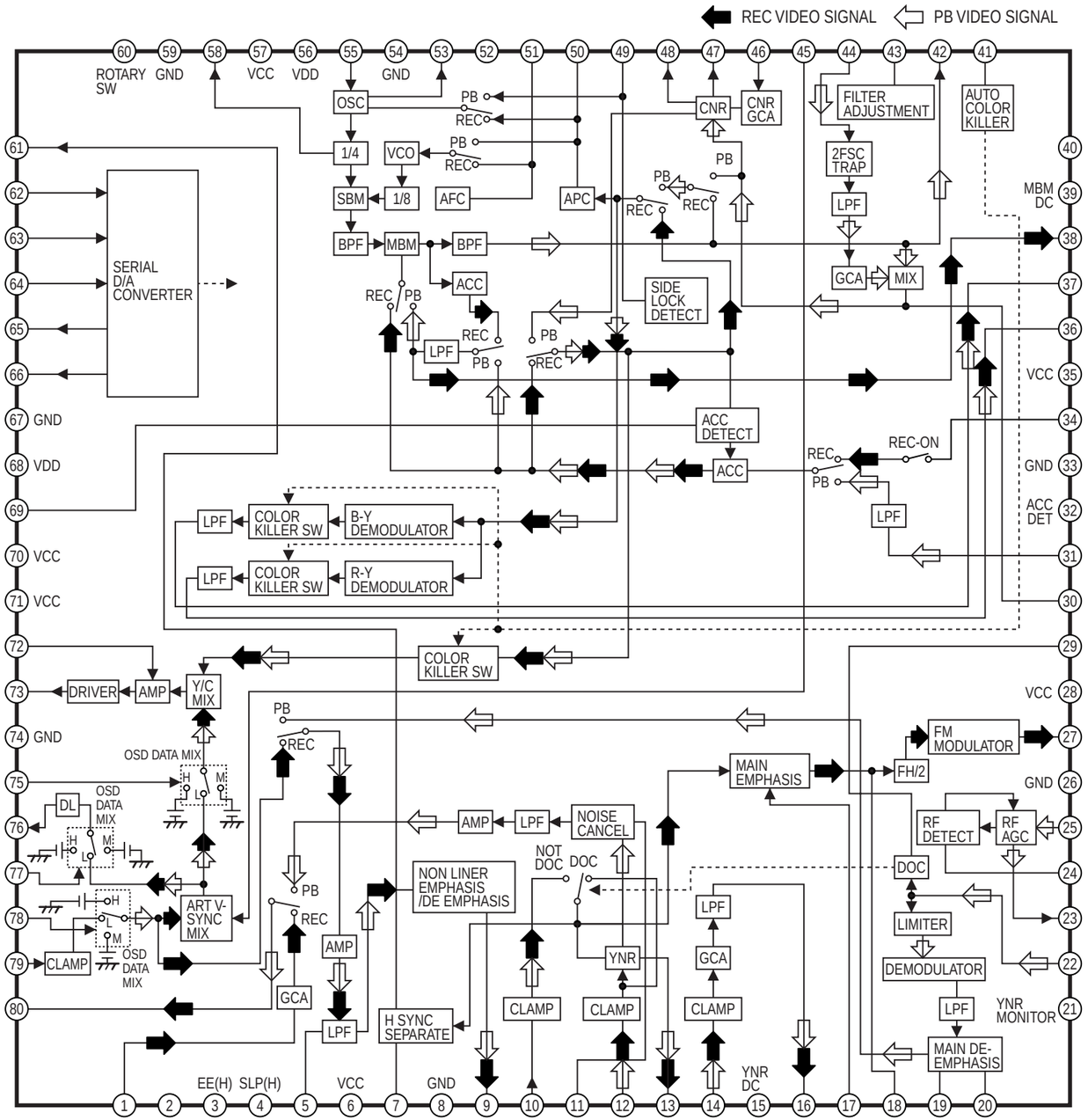
TO MAIN II
154 CYL FG(-)
153 CYL FG(+)
157 VH-
158 VH+
155 CYL PG
168 VH-
165 H2+
160 VH+
164 H2-
169 H3+
159 VH+
167 H3-
163 H1+
161 VH+
162 H1-
170 MAIN COIL 1
156 MAIN COIL 2
166 MAIN COIL 3

TO CYLINDER UNIT
FP6
39 MAIN COIL 3
38 MAIN COIL 3
37 MAIN COIL 2
36 MAIN COIL 2
35 MAIN COIL 1
34 MAIN COIL 1
33 H1-
32 VH+
31 H1+
30
29 H3-
28 VH+(H3)
27 H3+
26
25 H2-
24 VH+
23 H2+
22 VH-
21 CYL PG
20 VH+
19 VH-
18 CYL FG(+)
17 CYL FG(-)
16 GND
15 GND
14 GND
13 GND
12 REG +4.5V
11 REG +4.5V
10 FLYING ERASE ON(L)
9 HEAD SW
8 HEAD AMP SW
7 REG +4.5V
6 REG +4.5V
5 VIDEO DELAY REC(H)
4 ENVELOPE DET
3 ENV-VOLTAGE
2 REC VIDEO
1 PB VIDEO

LINK TO VOLTAGE CHART
LINK TO SIGNAL WAVEFORMS

LSJB8069

IC3001 VIDEO/AUDIO PROCESS IC-DETAIL BLOCK DIAGRAM, AN2401NFH



MAIN VI (AUDIO) SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

REC AUDIO SIGNAL
PB AUDIO SIGNAL

TO MAIN VII
AUDIO 106
AUDIO 105
TP4001
C4002 22/6.3V
C4001 Z

TO MAIN I
AUDIO RESET(L) 17
AUDIO MUTE(H) 64
AUDIO DELAY REC(H) 63
AUDIO REC(H) 61
R4062 33K
R4046 1K

TO MAIN V
AUDIO EE(H) 108
AUDIO FADE CONTROL(H) 109
SLP(H) 110

TO MAIN VII
REG +4.5V 101

Q4002 XP4601 (AUDIO MUTE)
R4008 22K
R4061 2200

R4024 10K
C4041 0.1
Q4011 (FADE CONTROL)
R4022 22
C4028 Z
R4001 3300
Q4007 (FADE CONTROL)
R4025 6800 Z
D4001 MA111
TP4004
R4002 100K
R4006 1M
C4004 10/6.3V
R4007 1500
R4004 12K
R4005 33K
C4005 22/6.3V
C4006 22/6.3V

MUTE -OFF
BIAS
FEED BACK BIAS
PB-ON
ALC DET
ALC
PB
REC
LINE AMP
REC AMP
REC-ON
VCC
SP-ON
PB AMP
FILTER
SLP -ON
GND
C4015 1
C4016 3.3/50V
R4018 10K
D4002 MA3120WA (12V)

R4009 22K
R4012 16K
C4007 1
R4013 22K
R4010 220
R4011 560
C4008 0.027
C4009 8200P
R4023 Z
C4017 22/6.3V
C4018 0.01
R4019 6800
R4020 330K
R4021 1200
C4019 4.7/10V

Q4003 (PB-ON)
R4014 3300
Q4004 (PB-ON)
R4015 3300

IC4001 BA7757BK (REC/PB PROCESS)
C4010 220P
C4020 47P
C4011 1
C4012 1500P
R4016 18K
C4013 2200P
TP4003
TP4002
R4017 10

C4023 6800P
R4030 68
Q4010 2SB970 (SWITCHING DELAY REC ON-ON)
L4001 220
T4001 EQQ6QT001T
C4021 1000P
C4022 4700P
R4027 15K
R4028 Z
R4031 22K
R4034 22K
Q4009 (SWITCHING DELAY REC ON-ON)
C4025 1
R4032 2200
R4033 2200
R4029 4700
Q4008 2SD602(R) (BIAS)
C4024 0.022
C4026 22/6.3V
R4035 100
C4027 0.1

TO MAIN I
67 IR DATA
66 IR +5V

FP11 (TO MIC/IR UNIT FJ4301)
11 GND
10 REC AUDIO
9 REG +4.5V
8 FLAME GND
7 LIGHT GND
6 LIGHT GND
5 SW UNREG
4 SW UNREG
3 GND
2 IR +5V
1 IR DATA

TO MAIN II
171 AUDIO HEAD
172 AUDIO HEAD
173 AUDIO HEAD
174 AUDIO ERASE HEAD
175 GND
176 GND
177 CONTROL ERASE HEAD

TO MAIN VII
103 SW UNREG
104 LIGHT GND

UNLESS OTHERWISE SPECIFIED;
PNP TRANSISTORS IS 2SB1218A,
NPN TRANSISTORS IS 2SD1819A,
WATTAGE OF RESISTORS IS 1/16W.

LINK TO VOLTAGE CHART

LSJB8069

MAIN VII (POWER SUPPLY) SCHEMATIC DIAGRAM

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE 1.5A 32V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME TYPE 1.5A 32V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE 2.5A 63V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME TYPE 2.5A 63V

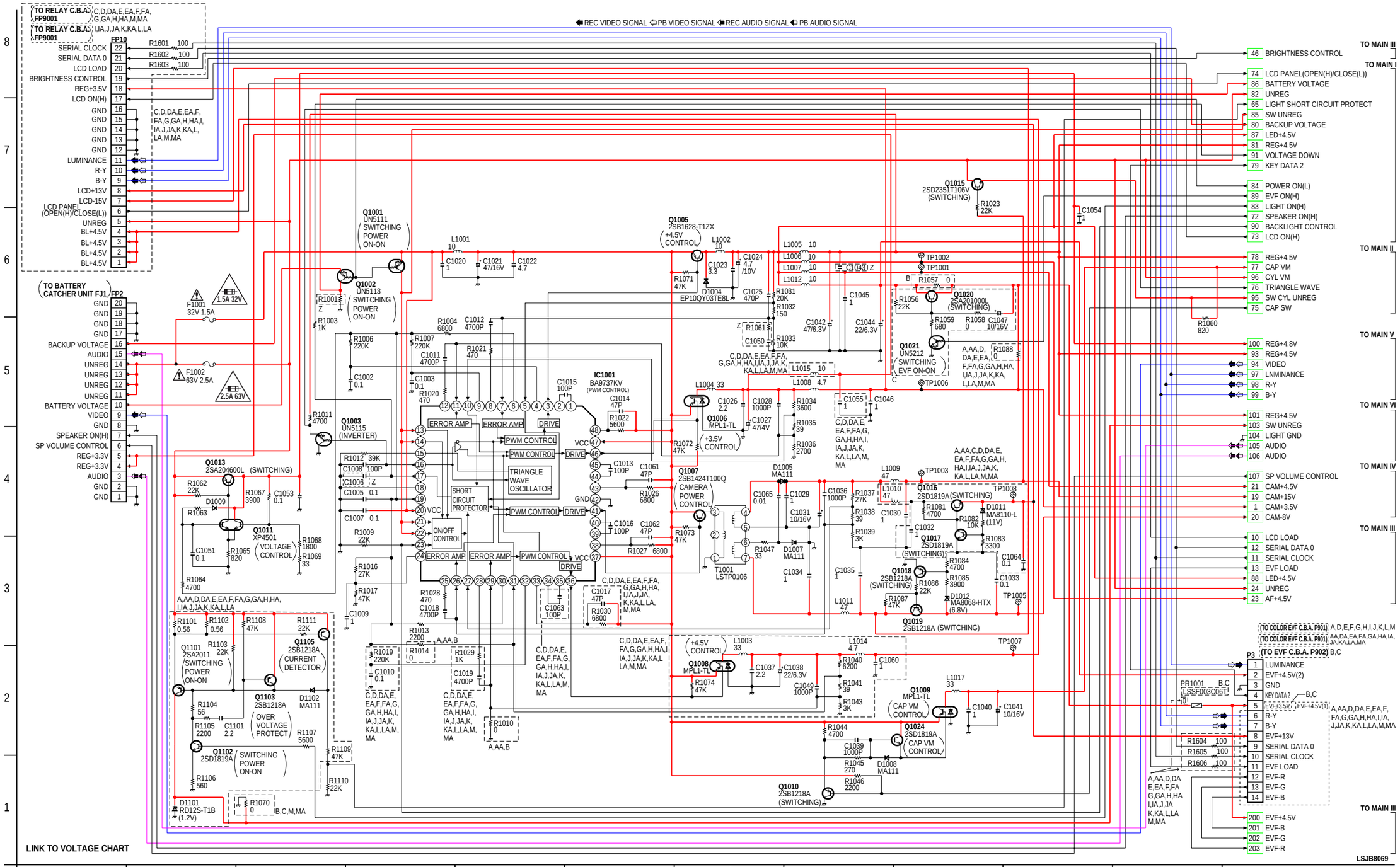
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z



LCD I (LCD POWER) / RELAY SCHEMATIC DIAGRAM (C, D, DA, E, EA, F, FA, G, GA, H, HA, M, MA)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

NOTE:
LCD SHAFT UNIT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.

LCD SHAFT UNIT
ON : REVERSE
OFF: NORMAL
LCD NORMAL /REVERSE SW
ON : OPEN
OFF: CLOSE
LCD OPEN /CLOSE SW

RELAY C.B.A.
R9004 27K
R9003 68K
R9001 4700
R9002 4700
FP9002
(TO MAIN C.B.A. FP10)
FP9001

SERIAL CLOCK	1	2	
SERIAL DATA	2	3	
LCD LOAD	3	4	
BRIGHTNESS CONTROL	4	5	
REG +3.5V	5	6	
LCD ON(H)	6	7	
GND	7	8	
GND	8	9	
GND	9	10	
GND	10	11	
GND	11	12	
LUMINANCE	12	13	
R-Y	13	14	
B-Y	14	15	
LCD +13V	15	16	
LCD -15V	16	17	
LCD PANEL(OPEN(H)/CLOSE(L))	17	18	
UNREG	18	19	
BL +4.5V	19	20	
BL +4.5V	20	21	
BL +4.5V	21	22	
BL +4.5V	22	23	
		24	

LSJB8075

FP1201

REG +3.5V	1	
SERIAL CLOCK	2	
SERIAL DATA	3	
LCD LOAD	4	
BRIGHTNESS CONTROL	5	
GND	6	
GND	7	
GND	8	
GND	9	
GND	10	
GND	11	
LUMINANCE	12	
R-Y	13	
B-Y	14	
LCD ON(H)	15	
UNREG	16	
BL +4.5V	17	
BL +4.5V	18	
BL +4.5V	19	
BL +4.5V	20	
LCD +13V	21	
LCD -15V	22	

TO LCD II
BRIGHTNESS CONTROL 1
LCD LOAD 2
SERIAL DATA 3
LCD CLOCK 4
B-Y 5
R-Y 6
LUMINANCE 7

L1201 10
C1204 1
R1227 0
R1209
R1211
Q1204 SWITCHING LCD ON-ON
Q1205 SWITCHING CONTROL/ERROR VOLTAGE DET
R1213 C1205
R1210 C1203 R1212 R1214
Z

VIDEO SIGNAL
TO LCD II
TP1201
9 LCD +3V
Q1214 2SD1819A SWITCHING LCD ON-ON
8 SW +3V
R1225 10K
Q1203 UN5112 ERROR VOLTAGE DET
TP1203
TP1204
11 LCD +12V
12 LCD +7.5V
Q1206 2SB1218A SWITCHING LCD ON-ON
Q1208 2SD1819A SWITCHING LCD ON-ON
R1215 47K
R1217 1K
C1206 0.1
C1207 0.1
R1216 22K
R1218 22K
D1206 MA8068-M (6.8V)
C1208 0.1
R1219 560
Q1209 2SD1819A ERROR VOLTAGE DET
R1220 5600
Q1215 UN5212 SWITCHING LCD ON-ON
Q1207 UN5212 SWITCHING LCD ON-ON
R1222 39K
L1202 15
Q1213 2SD2351T106V SWITCHING LCD ON-ON
TP1205
13 LCD +5V
C1209 0.1
C1210 0.01
D1203 MA8056-L (5.6V)
C1211 0.1
R1226 100K
Q1212 2SB1218A OVER VOLTAGE DET
R1223 4700
R1224 22K
C1212 0.1
Q1210 UN5213 ERROR VOLTAGE DET
C1213 0.01
D1204 MA8120-H (12V)
TP1206
14 LCD -15V
Q1211 2SD1819A SWITCHING LCD ON-ON
TP1202
L1203 10
10 BL +4.5V

LINK TO VOLTAGE CHART

UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/16W.

LSJB8073

5 4 3 2 1
A B C D E F G H

LCD II (LCD DRIVE) SCHEMATIC DIAGRAM (C, D, DA, E, EA, F, FA, G, GA, H, HA, M, MA)

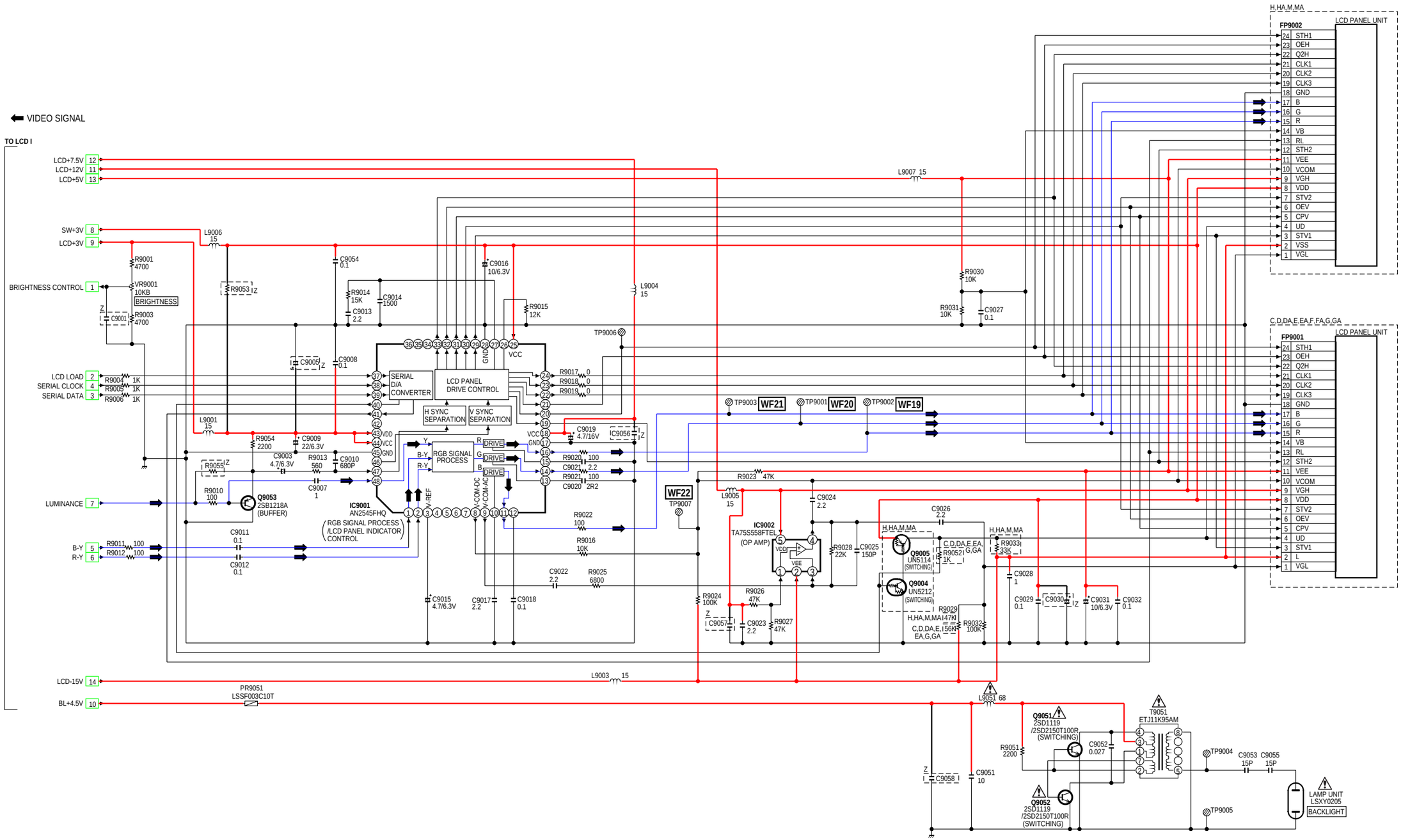
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

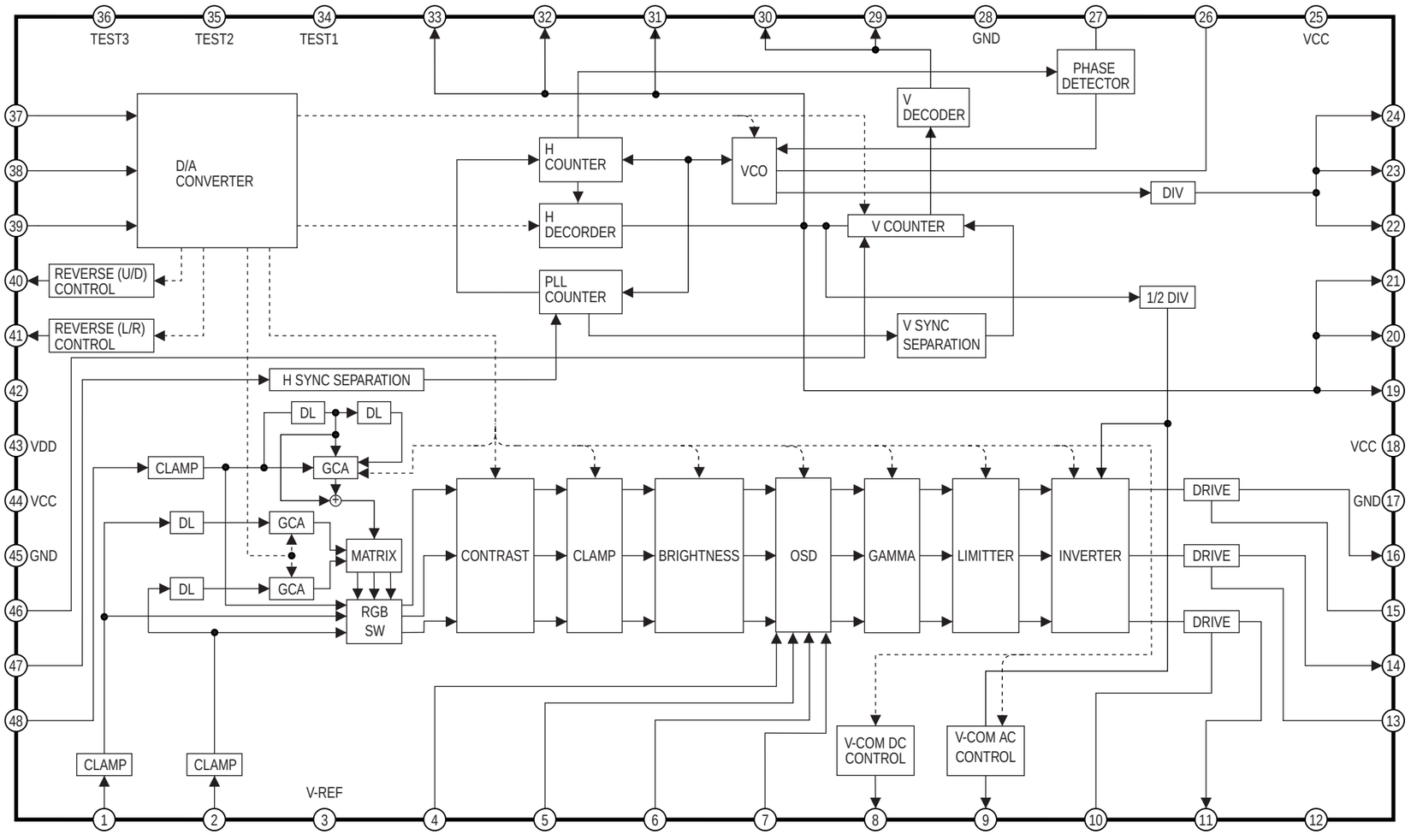


UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/16W.

LINK TO VOLTAGE CHART
LINK TO SIGNAL WAVEFORM

LSJB8073

IC9001 RGB SIGNAL PROCESS/LCD PANEL INDICATOR CONTROL IC-DETAIL BLOCK DIAGARM, AN2545FHQ



LCD I (LCD POWER) / RELAY SCHEMATIC DIAGRAM (I, IA, J, JA, K, KA, L, LA)

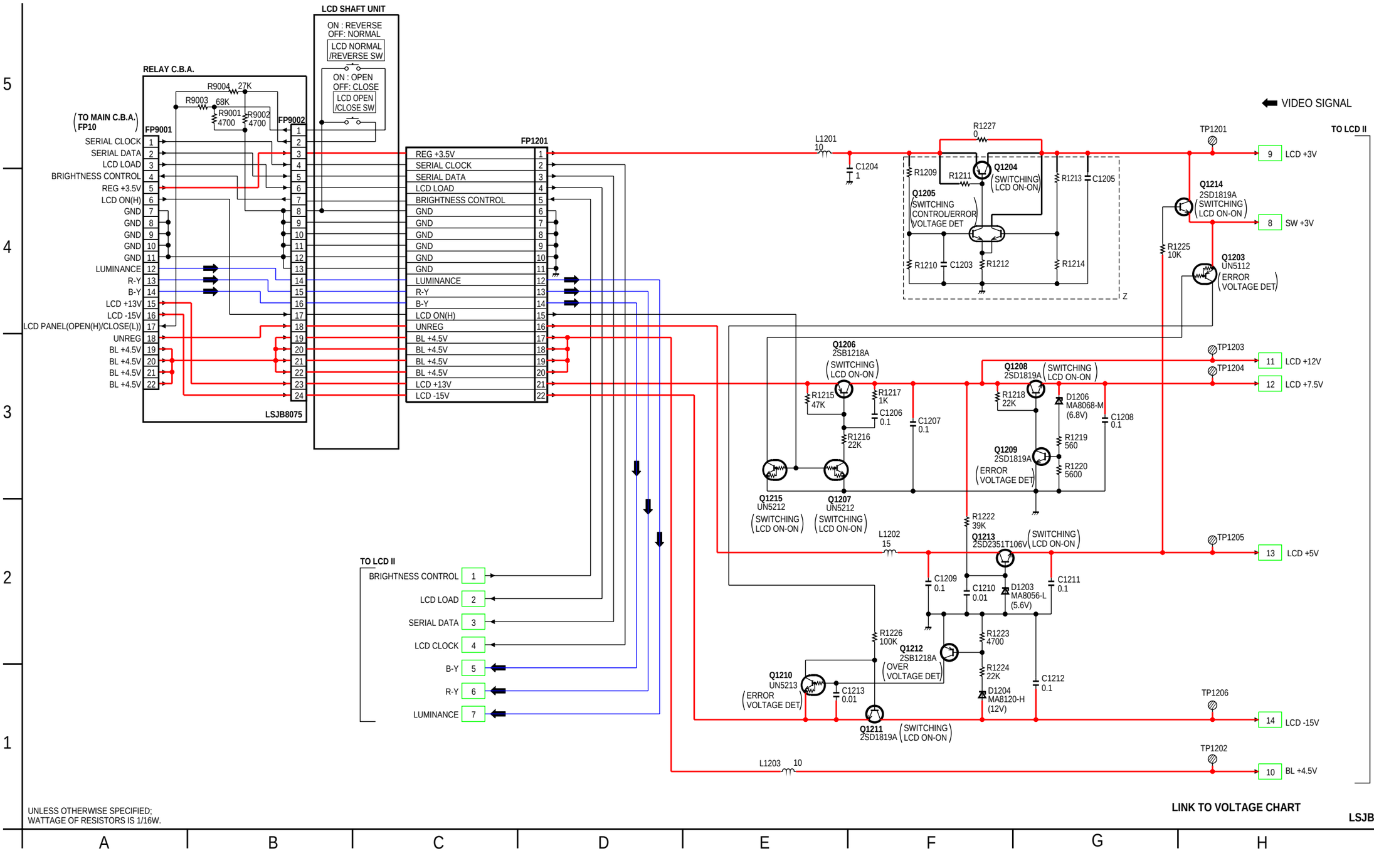
NOTE:
LCD SHAFT UNIT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z



LCD II (LCD DRIVE) SCHEMATIC DIAGRAM (I, IA, J, JA, K, KA, L, LA)

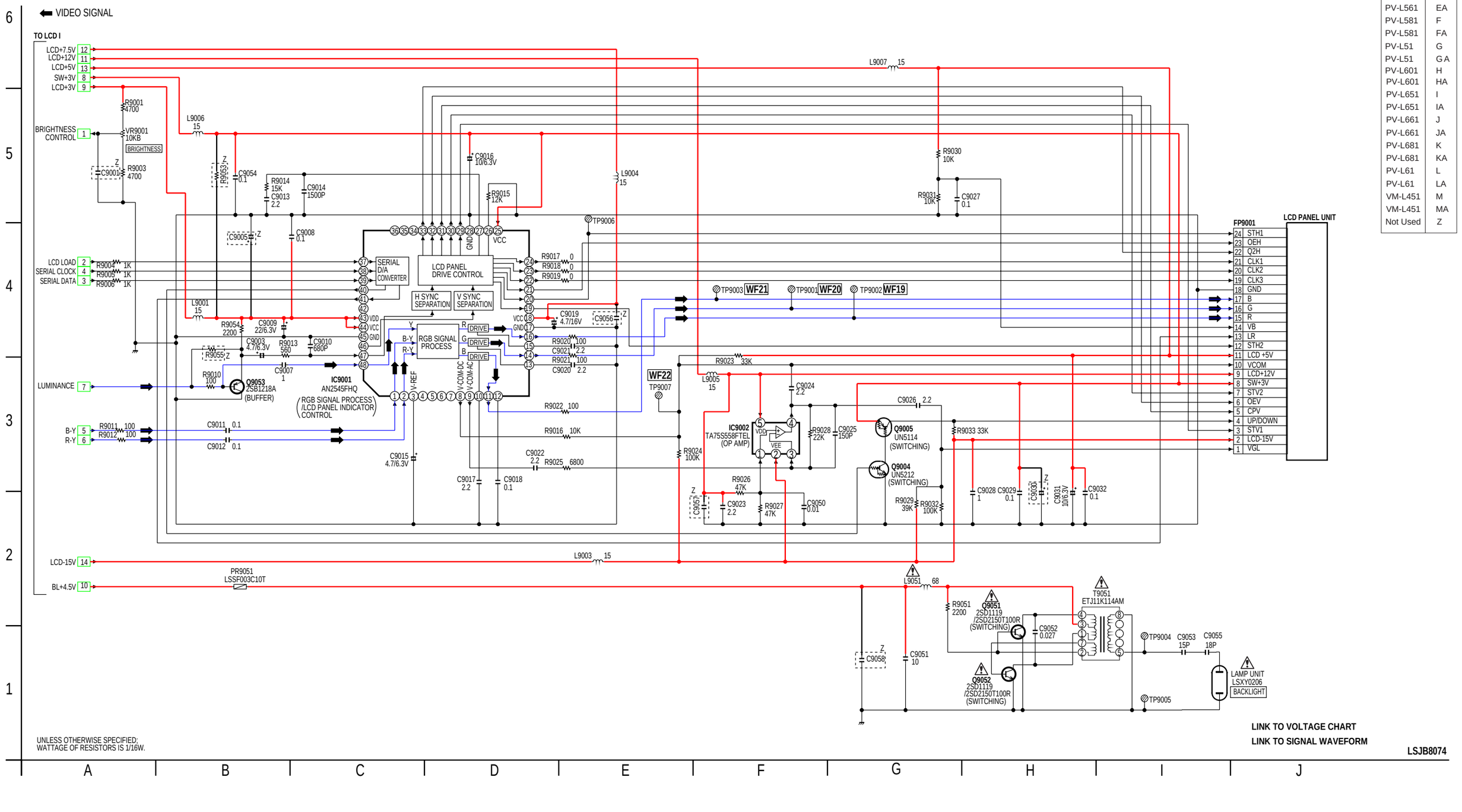
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

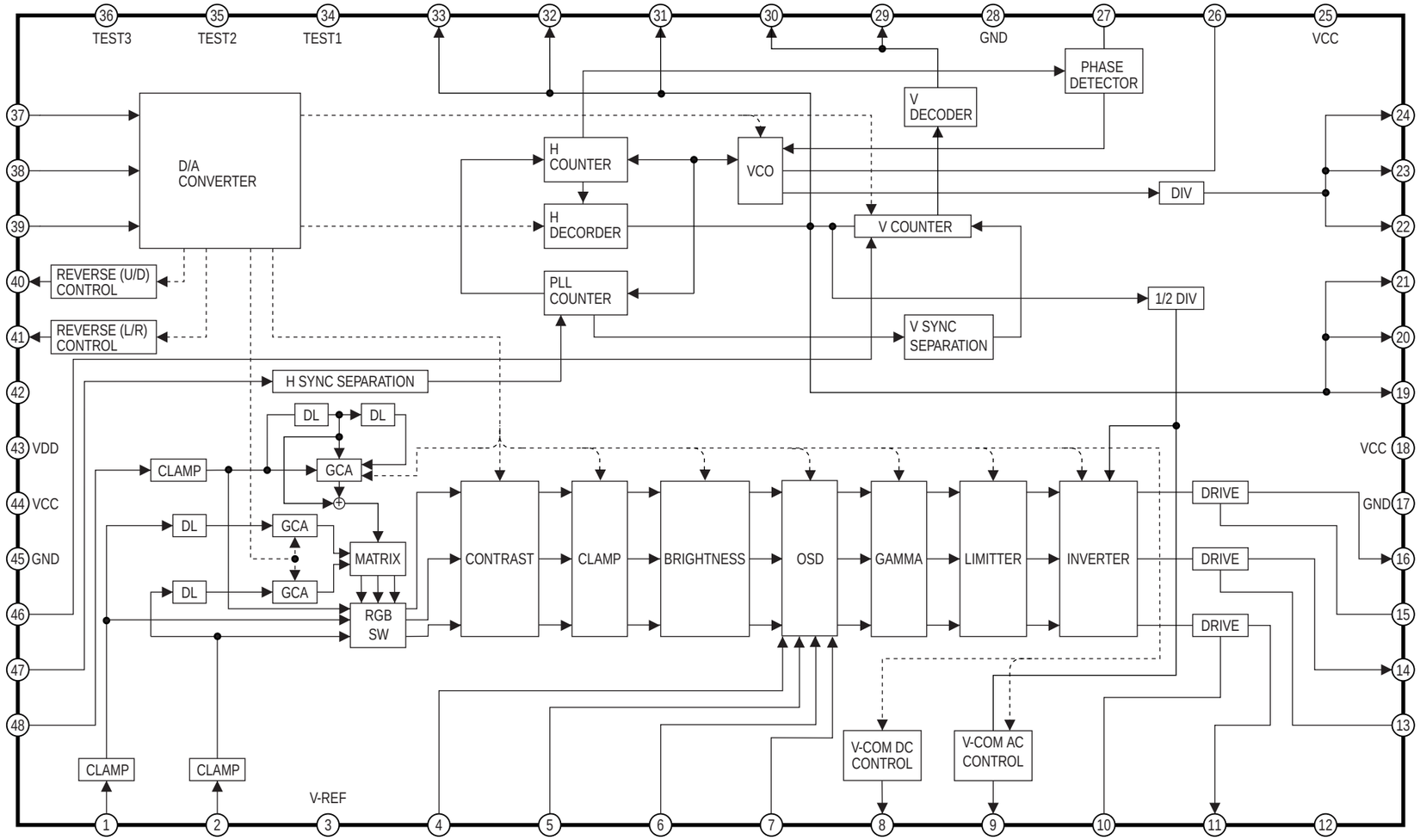
Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z



IC9001 RGB SIGNAL PROCESS/LCD PANEL INDICATOR CONTROL IC-DETAIL BLOCK DIAGARM, AN2545FHQ



EVF SCHEMATIC DIAGRAM (B, C)

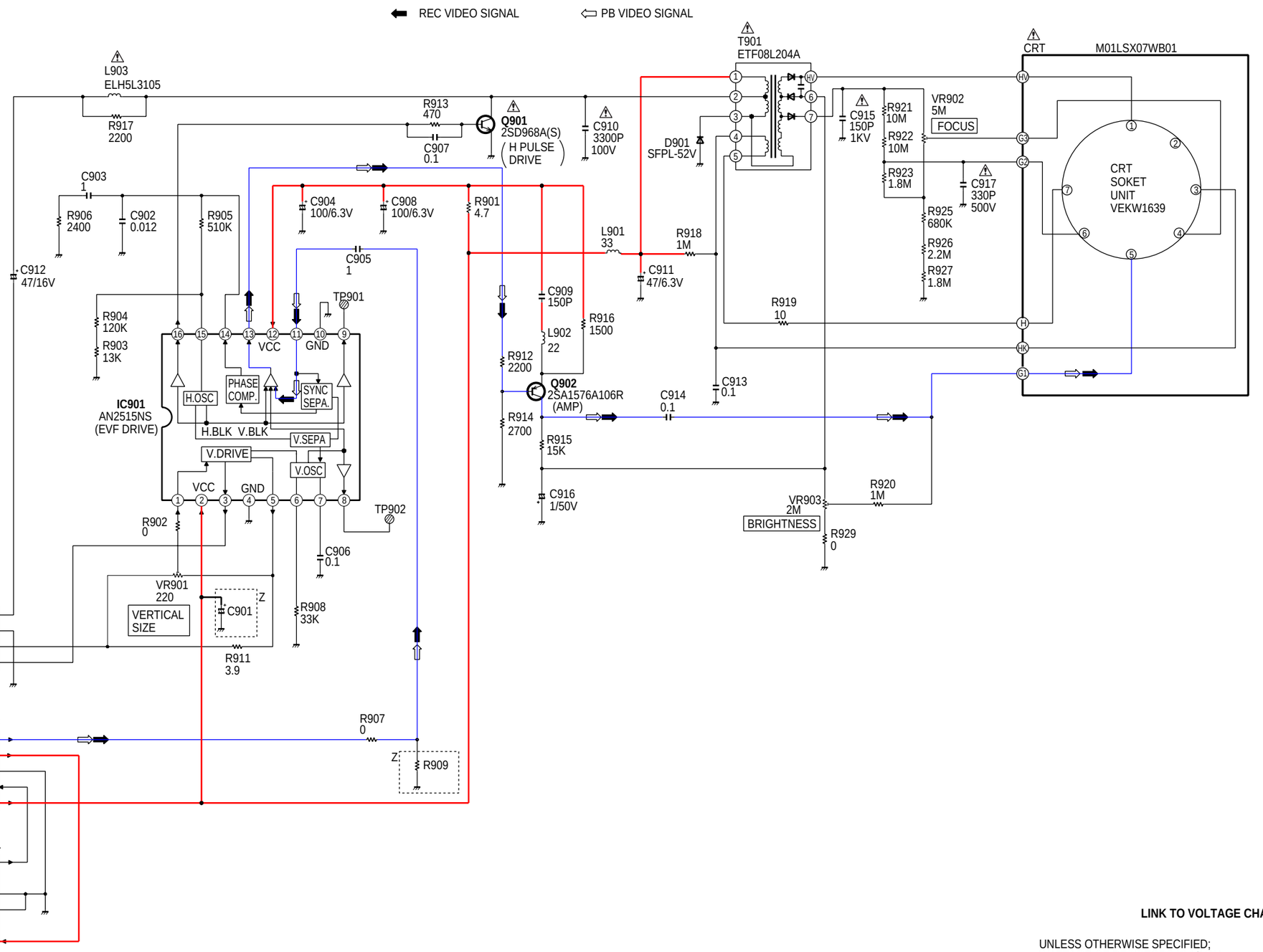
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z



LINK TO VOLTAGE CHART

UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/16W.

LSJB8081

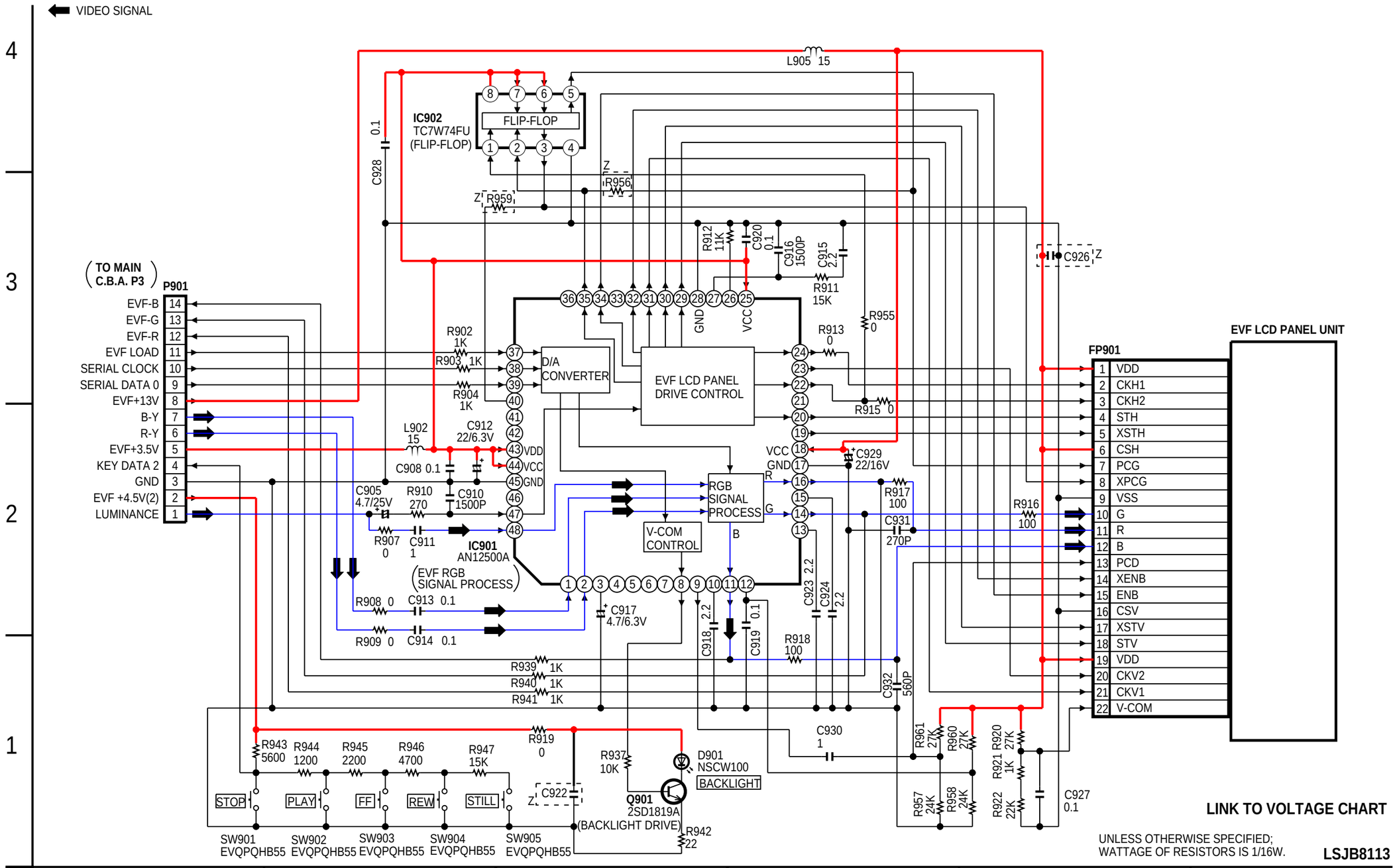
COLOR EVF SCHEMATIC DIAGRAM (A, D, E, F, G, H, I, J, K, L, M)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

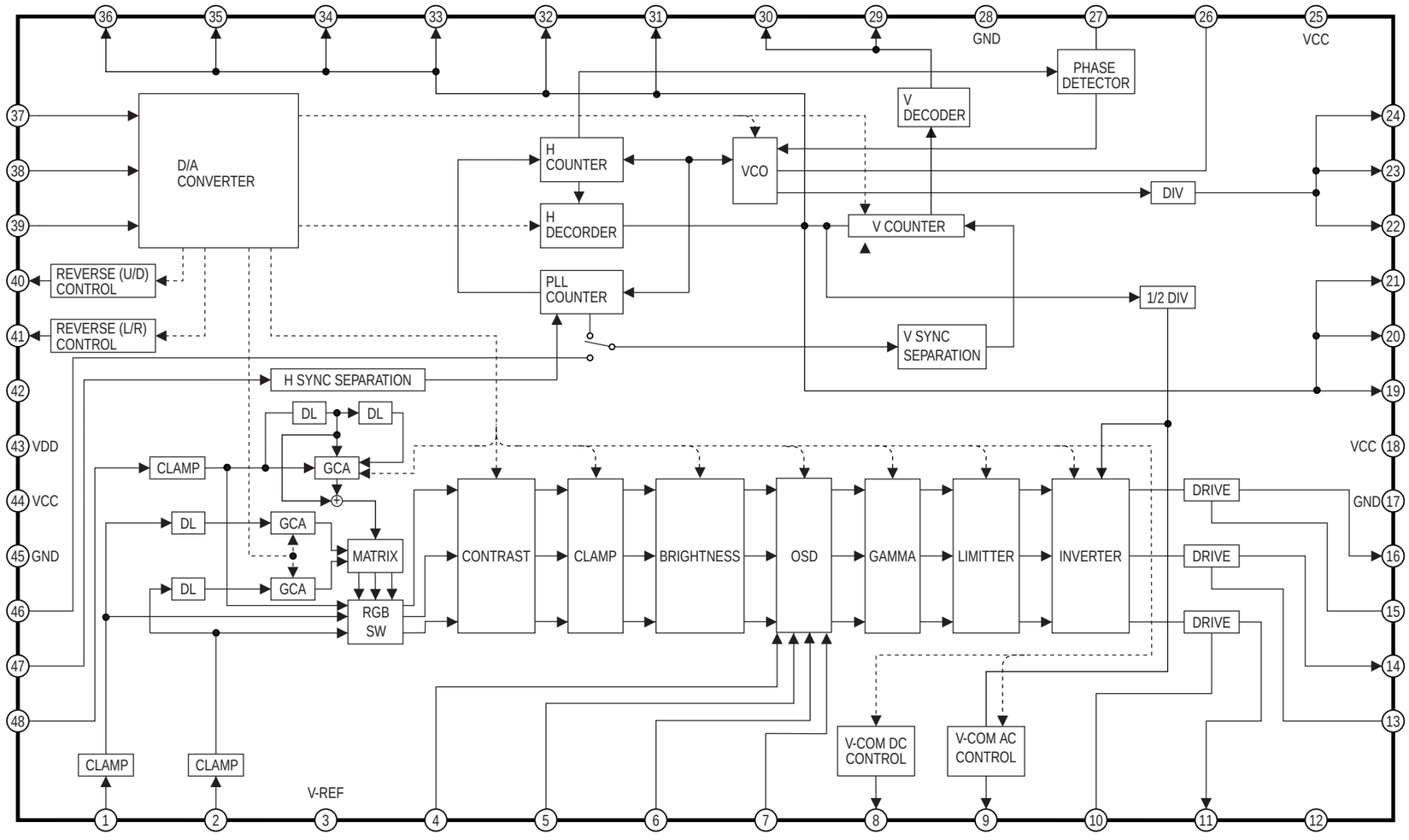
Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z



IC901 RGB SIGNAL PROCESS/LCD PANEL INDICATOR CONTROL IC-DETAIL BLOCK DIAGARM, AN12500A



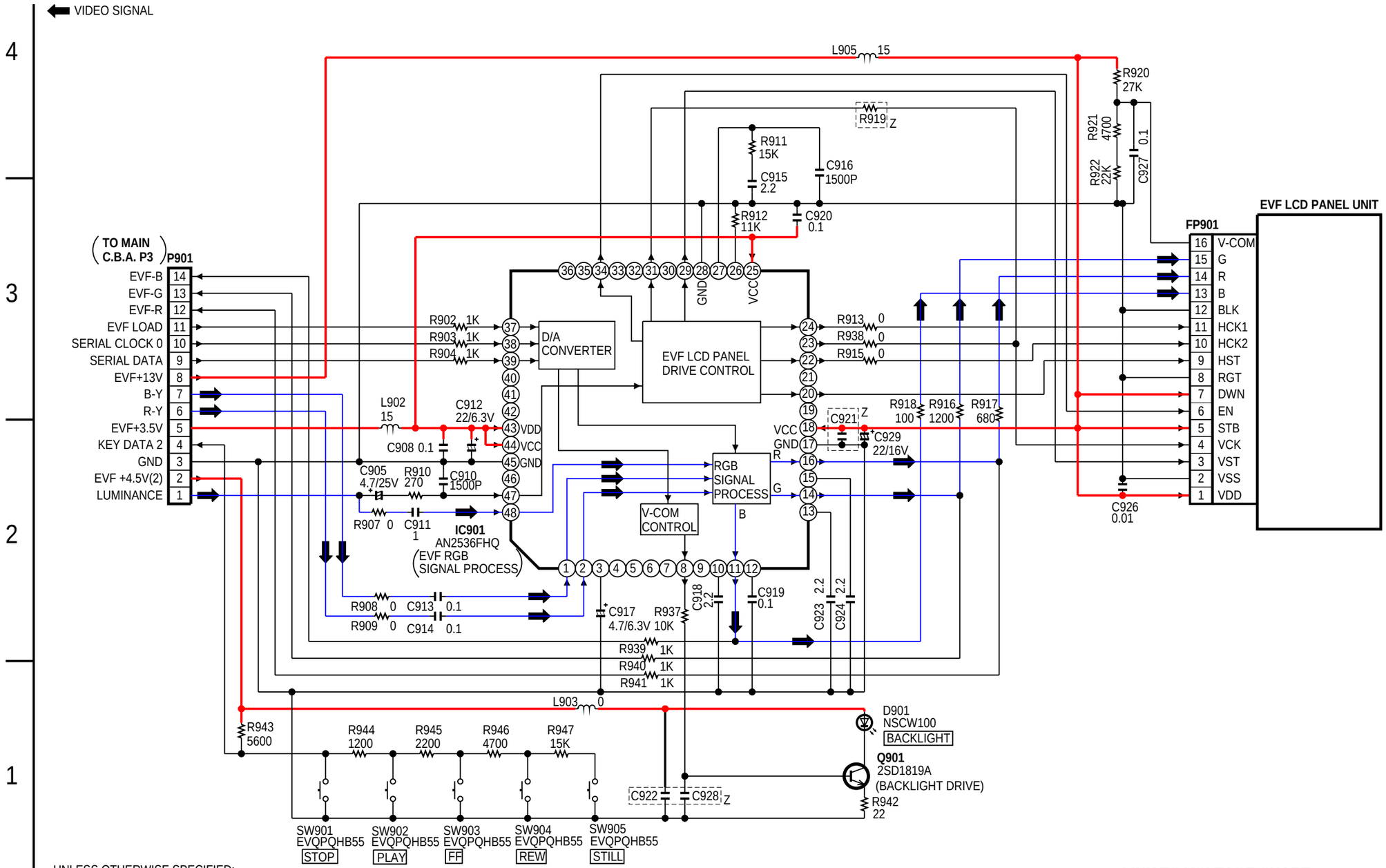
COLOR EVF SCHEMATIC DIAGRAM (AA, DA, EA, FA, GA, HA, IA, JA, KA, LA, MA)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	GA
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

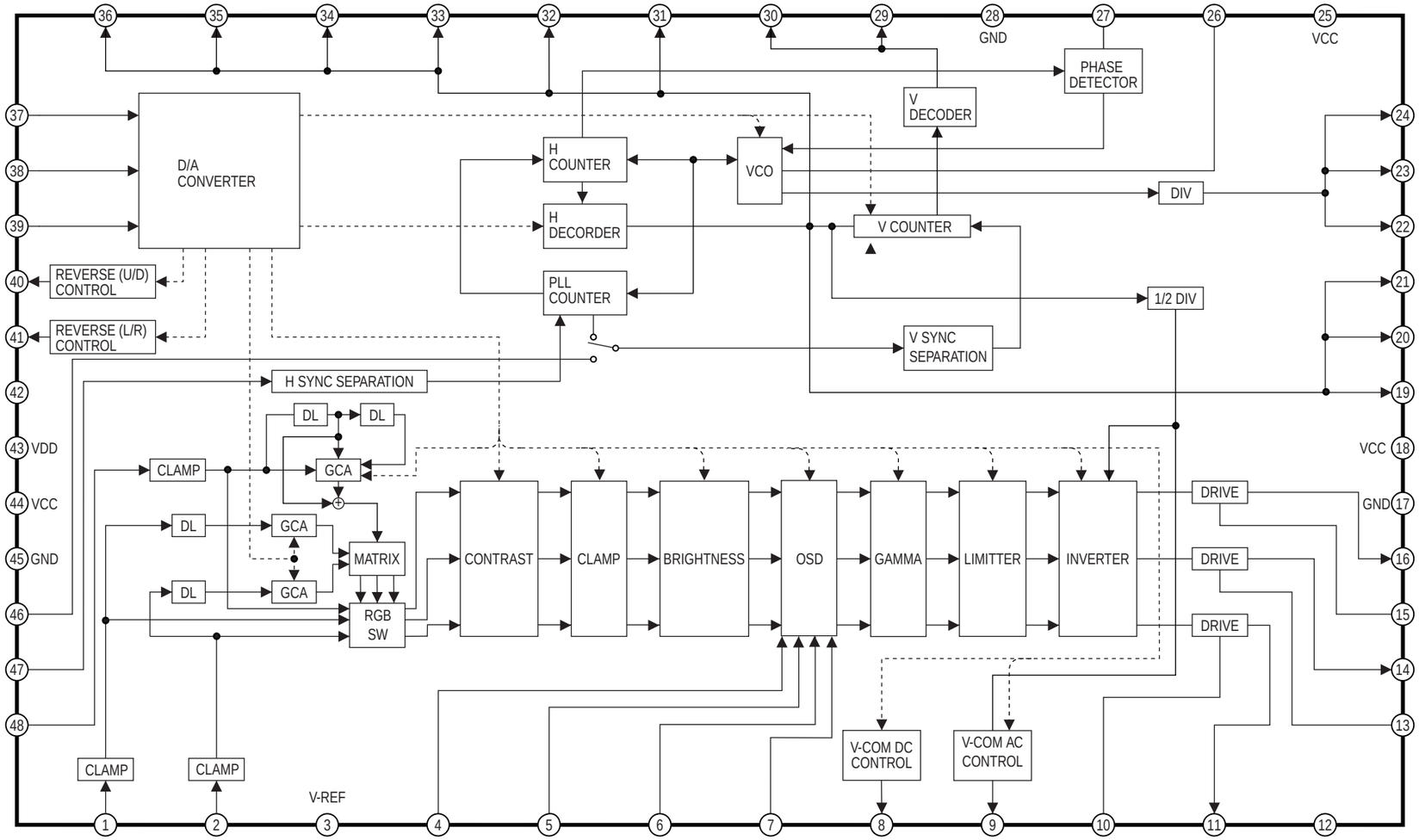


UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/16W.

LINK TO VOLTAGE CHART

LSJB8077

IC901 RGB SIGNAL PROCESS/LCD PANEL INDICATOR CONTROL IC-DETAIL BLOCK DIAGARM, AN2536FHQ



HEAD AMP SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

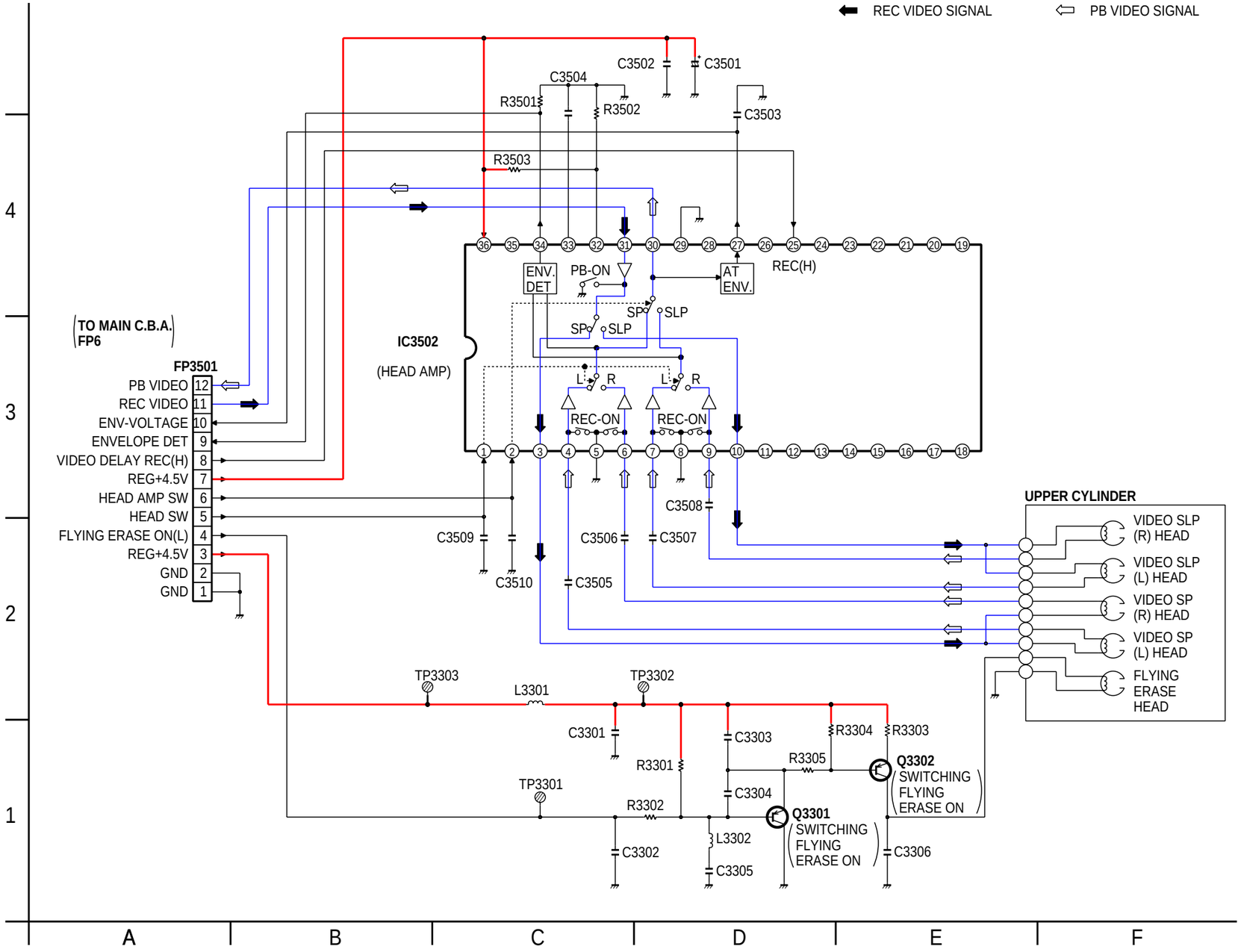
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

"FOR REFERENCE ONLY"

NOTE:
HEAD AMP IS NOT SERVICEABLE AND IS SUPPLIED AS A CYLINDER UNIT ONLY FOR REPLACEMENT.

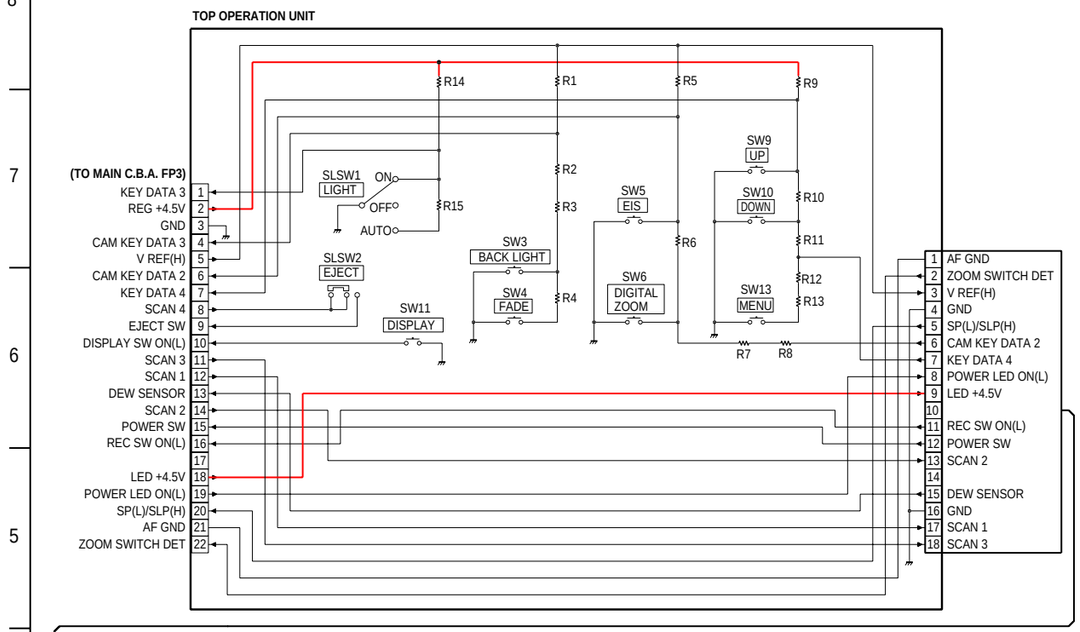
REC VIDEO SIGNAL PB VIDEO SIGNAL



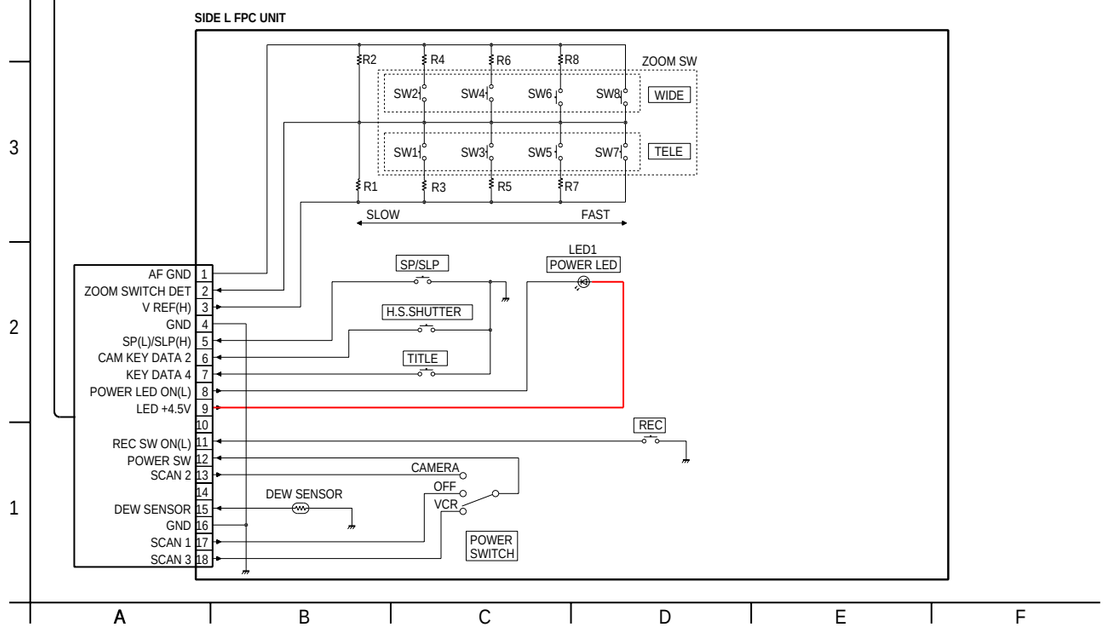
TOP OPERATION UNIT/SIDE L FPC UNIT

"FOR REFERENCE ONLY"

NOTE:
TOP OPERATION UNIT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.



NOTE:
SIDE L FPC UNIT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.



NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

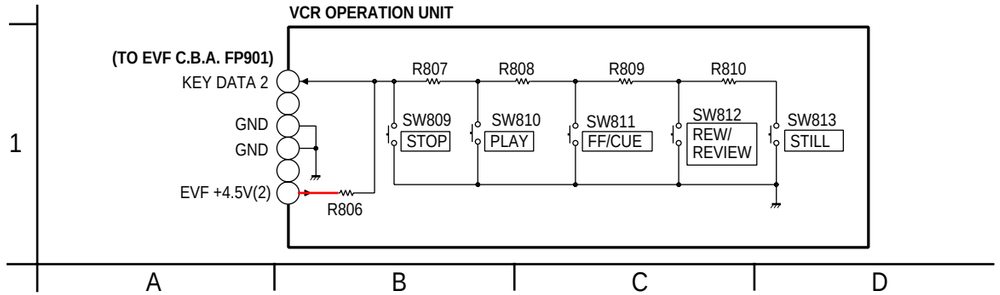
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

VCR OPERATION UNIT (B, C)

"FOR REFERENCE ONLY"

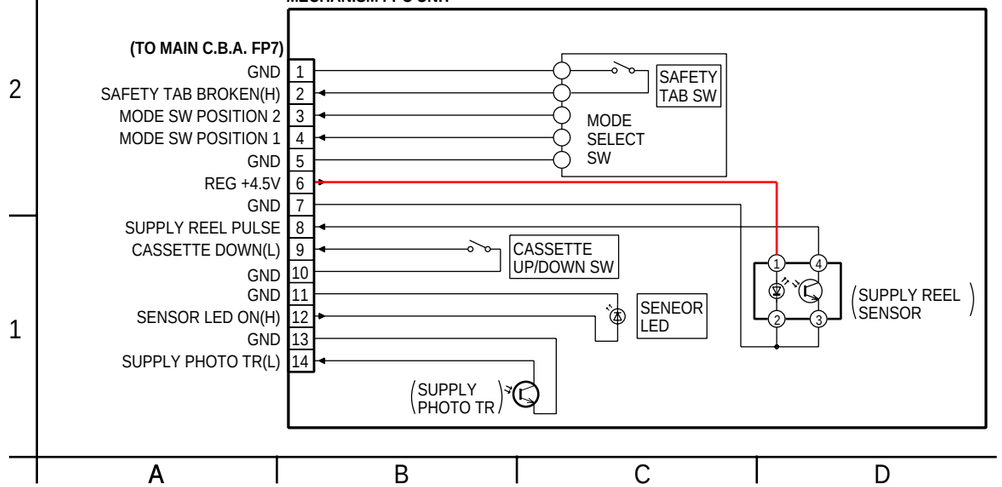
NOTE:
VCR OPERATION UNIT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.



MECHANISM FPC UNIT

"FOR REFERENCE ONLY"

NOTE:
MECHANISM FPC UNIT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.



NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

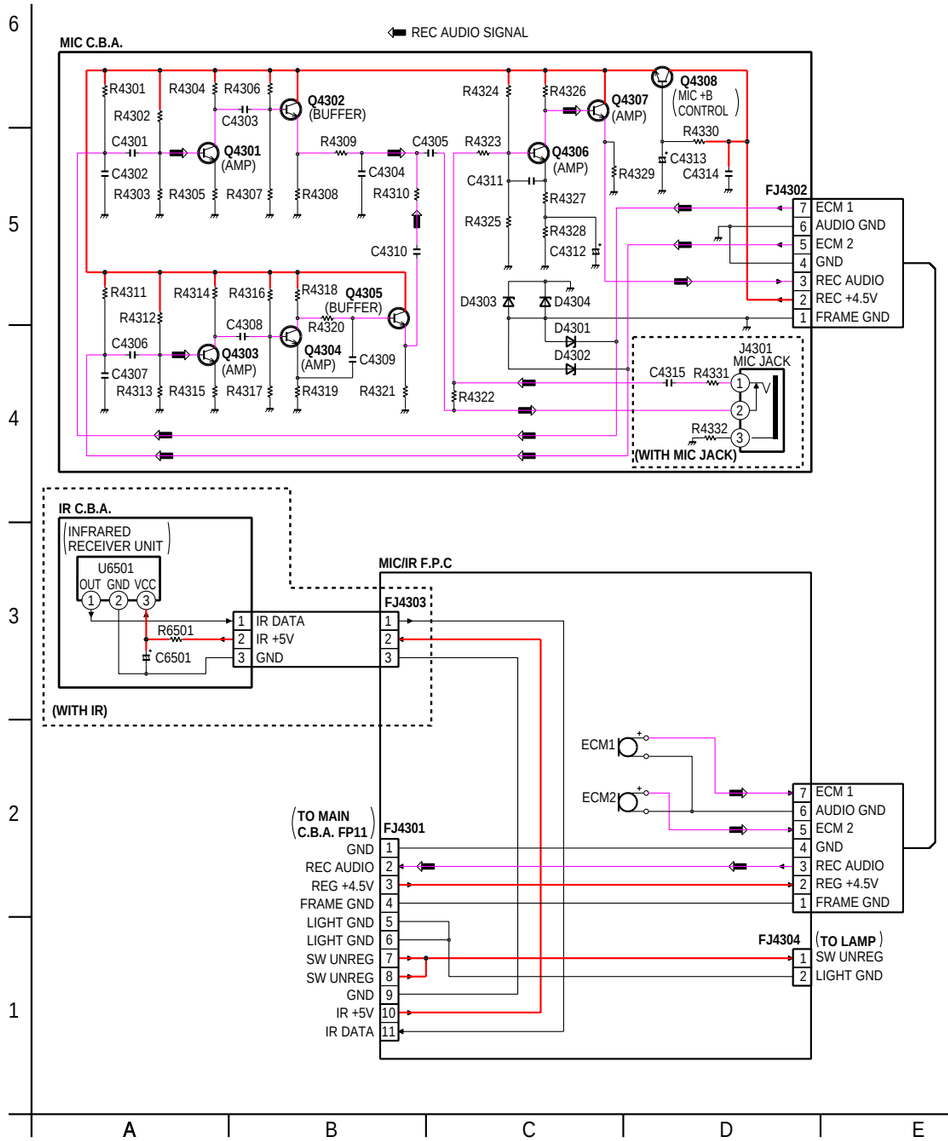
Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z

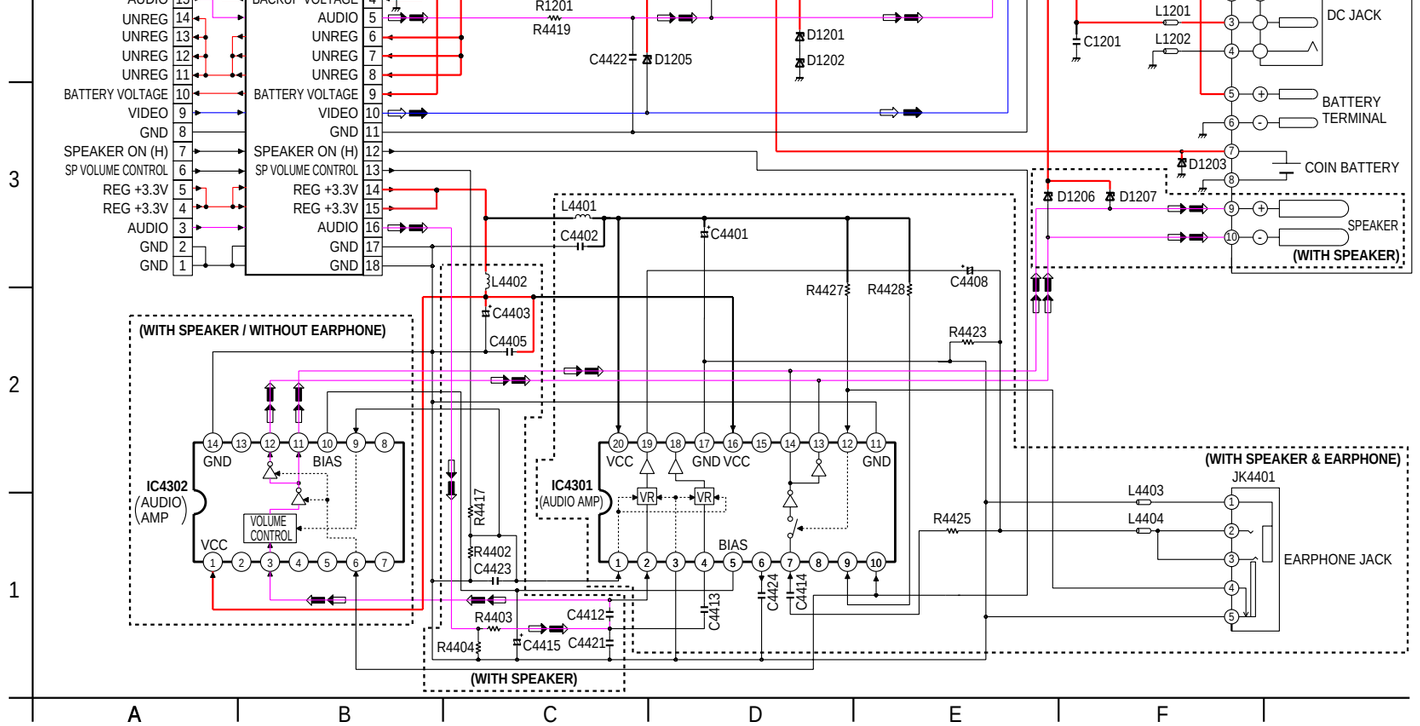
MIC/IR UNIT

"FOR REFERENCE ONLY"



BATTERY CATCHER UNIT

"FOR REFERENCE ONLY"



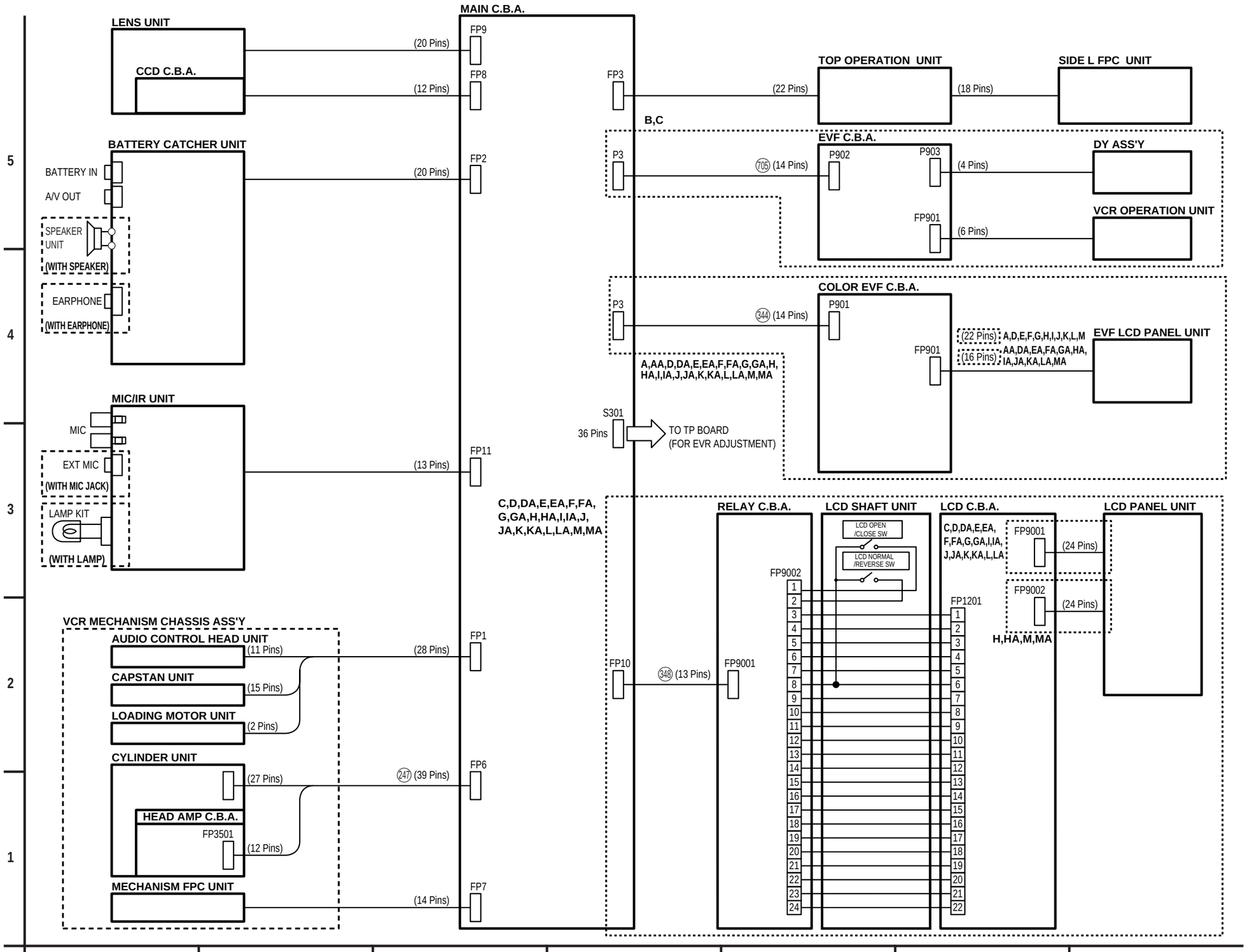
INTERCONNECTION SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-D301	A
PV-D301	AA
VM-D101	B
PV-L501	C
PV-L551	D
PV-L551	DA
PV-L561	E
PV-L561	EA
PV-L581	F
PV-L581	FA
PV-L51	G
PV-L51	G A
PV-L601	H
PV-L601	HA
PV-L651	I
PV-L651	IA
PV-L661	J
PV-L661	JA
PV-L681	K
PV-L681	KA
PV-L61	L
PV-L61	LA
VM-L451	M
VM-L451	MA
Not Used	Z



NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

MAIN C.B.A. (CAMERA SECTION)

MODE / PIN NO.	CAMERA
IC301	
1	---
2	---
3	---
4	---
5	---
6	---
7	---
8	---
9	---
10	---
11	---
12	---
13	---
14	---
15	3.5
16	0
17	---
18	---
19	---
20	---
21	---
22	---
23	---
24	---
25	---
26	---
27	0.2
28	3.5
29	---
30	---
31	---
32	---
33	---
34	---
35	---
36	---
37	---
38	---
39	0
40	0
41	0
42	0
43	0
44	---
45	0.5
46	1.7
47	---
48	---
49	---
50	3.2
51	0
52	3.5
53	0.2
54	0.1

MODE / PIN NO.	CAMERA
55	3.5
56	0
57	3.5
58	---
59	---
60	0
61	3.5
62	---
63	---
64	---
65	---
66	---
67	---
68	---
69	1.7
70	0
71	0
72	2.0
73	1.1
74	2.0
75	3.5
76	0
77	3.2
78	2.8
79	0
80	3.5
81	2.0
82	1.1
83	0
84	1.8
85	3.5
86	0
87	0
88	---
89	1.7
90	1.7
91	0
92	0
93	3.5
94	---
95	---
96	3.2
97	0.1
98	1.0
99	3.2
100	0
101	0.2
102	0.4
103	3.5
104	3.5
105	---
106	0
107	3.4
108	1.8
109	3.4

MODE / PIN NO.	CAMERA
110	1.4
111	3.4
112	1.8
113	0
114	3.5
115	0.2
116	0.4
117	0.2
118	0.1
119	0
120	3.5
121	0
122	0.1
123	3.5
124	0.8
125	1.6
126	2.7
127	0.1
128	0.7
129	1.4
130	2.3
131	1.1
132	1.4
133	1.8
134	0
135	3.5
136	1.2
137	---
138	1.8
139	0.5
140	0
141	0
142	0
143	0
144	0
IC306	
1	---
2	3.5
3	3.5
4	3.5
5	0.1
6	1.5
7	0
8	3.5
IC308	
1	0
2	0
3	---
4	0
5	3.5
6	3.5
7	0.8
8	0
9	0
10	0

MODE / PIN NO.	CAMERA
11	---
12	3.5
13	3.5
14	0
15	0
16	0.3
17	3.5
18	0
19	0
20	2.5
21	0
22	3.1
23	2.1
24	1.3
25	3.5
26	2.6
27	0.2
28	1.2
29	1.0
30	---
31	0
32	3.5
33	3.5
34	0.2
35	0
36	0
37	0.4
38	---
39	---
40	---
41	2.0
42	0
43	3.4
44	3.4
45	1.9
46	1.9
47	3.5
48	3.5
49	0
50	0
51	3.4
52	0.2
53	3.5
54	3.5
55	3.5
56	3.5
57	0.1
58	3.5
59	3.4
60	3.5
61	3.5
62	3.5
63	---
64	---
65	1.8

MODE / PIN NO.	CAMERA
66	0
67	3.5
68	---
69	---
70	0
71	0.1
72	3.5
73	0.8
74	1.6
75	2.7
76	0.1
77	1.6
78	0.8
79	0
80	1.7
81	2.7
82	3.0
83	0.1
84	0.1
85	3.5
86	0
87	0
88	0
89	---
90	---
91	0.1
92	0.1
93	0
94	0
95	0.2
96	3.5
97	3.5
98	0
99	0
100	0
IC309	
1	13.5
2	2.2
3	2.2
4	14.8
5	1.4
6	1.4
7	0.1
8	3.4
9	0.1
10	0.1
11	0
12	0.6
13	0.6
14	2.5
IC602	
1	0
2	1.7
3	1.7
4	0.1

MODE / PIN NO.	CAMERA
5	1.5
6	1.4
7	---
8	3.4
9	0.1
10	0.7
11	0.1
12	0.9
13	0.2
14	0.4
15	0.1
16	---
17	0.4
18	0.2
19	---
20	3.2
21	---
22	3.5
23	2.0
24	0
25	3.5
26	3.4
27	0.2
28	0.1
29	3.3
30	0.2
31	3.4
32	3.5
33	3.5
34	0
35	0
36	1.4
37	0.3
38	3.5
39	3.5
40	0
41	3.5
42	0.8
43	1.1
44	0.5
45	0.3
46	0.3
47	1.4
48	---
49	1.4
50	1.7
51	3.5
52	0
53	0
54	3.5
55	0
56	3.5
57	3.5
58	1.7
59	1.7

MODE / PIN NO.	CAMERA
60	---
61	3.5
62	3.5
63	3.5
64	3.5
IC603	
1	-7.4
2	-7.8
3	-0.2
4	0
5	-0.4
6	3.5
7	0.1
8	3.5
9	0.1
10	3.4
11	---
12	3.4
13	0.3
14	3.3
15	0
16	14.7
17	-7.5
18	-7.5
19	0
20	14.7
IC605	
1	0
2	1.9
3	---
4	---
5	2.0
6	4.4
7	1.3
8	2.1
9	1.8
10	3.4
11	0.3
12	0
13	---
14	---
15	---
16	---
17	3.4
18	1.7
19	3.4
20	1.4
21	0.2
22	0.3
23	---
24	0.7
25	0.1
26	0
27	2.3
28	2.3

MODE / PIN NO.	CAMERA
29	4.4
30	---
31	3.1
32	---
33	1.8
34	1.8
35	0
36	4.4
37	3.1
38	1.9
39	1.9
40	4.4
41	0
42	2.2
43	2.3
44	3.0
45	0.1
46	2.3
47	3.4
48	1.4
IC701	
1	0
2	0.2
3	---
4	1.2
5	1.2
6	0.2
7	0
8	0
9	0
10	0.3
11	0.3
12	0
13	0.3
14	7.1
IC702	
1	0
2	0.3
3	---
4	1.2
5	1.2
6	0
7	0
8	0
9	0
10	0.3
11	3.1
12	0
13	0.1
14	6.3
Q301	
E	2.5
C	4.5
B	3.1

MODE / PIN NO.	CAMERA
Q302	
E	1.6
C	3.1
B	2.3
Q303	
E	1.8
C	0
B	1.2
Q305	
E	2.9
C	4.5
B	3.6
Q306	
E	2.2
C	4.5
B	2.9
Q307	
E	2.6
C	4.5
B	2.9
Q310	
E	2.8
C	4.6
B	2.4
Q311	
E	1.8
C	4.6
B	2.4
Q617	
E	1.1
C	4.4
B	1.8
Q703	
E	0
C	3.5
B	0
TP601	1.5
TP602	0
TP603	0

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

MAIN C.B.A. (POWER SUPPLY/VIDEO/AUDIO SECTION)

MODE / PIN NO.	STOP
IC1001	
1	5.5
2	7.1
3	6.6
4	1.5
5	1.6
6	1.6
7	1.6
8	1.6
9	1.5
10	1.6
11	1.6
12	0.9
13	7.1
14	7.1
15	0.5
16	1.4
17	0
18	0
19	0.2
20	7.0
21	7.1
22	7.1
23	4.2
24	1.0
25	0.7
26	1.6
27	0.1
28	0.2
29	0.1
30	0.1
31	1.6
32	1.5
33	6.3
34	7.0
35	5.4
36	6.5
37	7.0
38	6.5
39	7.2
40	6.1
41	0.3
42	0
43	7.4
44	7.0
45	7.4
46	7.4
47	7.1
48	6.4
IC3001	
1	2.2
2	---
3	4.1
4	0.1
5	2.0

MODE / PIN NO.	STOP
6	4.5
7	2.2
8	0
9	2.0
10	2.1
11	0.4
12	0
13	1.5
14	2.1
15	3.9
16	0.4
17	2.1
18	2.1
19	2.5
20	2.1
21	2.0
22	3.0
23	4.0
24	3.2
25	2.9
26	0
27	3.2
28	4.5
29	2.7
30	0
31	2.4
32	3.0
33	0
34	3.4
35	-4.5
36	2.5
37	2.4
38	2.3
39	2.8
40	1.3
41	1.4
42	2.2
43	2.2
44	3.1
45	0.2
46	---
47	---
48	---
49	2.1
50	2.1
51	2.1
52	4.5
53	2.3
54	0
55	2.8
56	3.6
57	-4.5
58	3.0
59	0
60	4.4

MODE / PIN NO.	STOP
61	0.5
62	2.2
63	4.5
64	4.5
65	0.2
66	0.7
67	0
68	3.6
69	2.1
70	4.5
71	4.6
72	1.6
73	1.8
74	0
75	0.2
76	2.1
77	0.2
78	0.1
79	2.4
80	2.1
IC3002	
1	2.2
2	0
3	4.5
4	3.0
5	0
6	2.6
7	1.7
8	2.8
9	4.5
10	0
11	2.5
12	2.6
13	2.9
14	0
15	2.5
16	4.5
17	0
18	2.4
19	2.6
20	2.3
IC4001	
1	2.3
2	2.3
3	---
4	2.3
5	0
6	0.2
7	1.7
8	4.5
9	2.3
10	3.5
11	4.2
12	2.3
13	4.5

MODE / PIN NO.	STOP
14	2.3
15	0.1
16	0.1
17	0
18	2.9
19	0
20	0
21	---
22	0
23	0
24	1.7
25	0.7
26	1.7
27	4.6
28	1.7
29	4.6
30	1.7
31	2.3
32	2.3
Q1001	
E	7.1
C	7.1
B	0.1
Q1002	
E	0.1
C	0
B	0.1
Q1003	
E	2.0
C	0
B	1.4
Q1005	
E	7.1
C	4.6
B	6.6
Q1006	
E	7.1
C	3.6
B	6.8
A	0
Q1007	
E	7.1
C	3.6
B	6.8
Q1008	
E	7.1
C	4.7
B	6.6
A	0
Q1009	
E	7.1
C	6.4
B	6.8
A	0

MODE / PIN NO.	STOP
Q1010	
E	7.1
C	0
B	7.1
Q1011	
E1	1.9
C1	6.7
B1	1.3
E2	1.5
C2	4.8
B2	2.5
Q1013	
E	7.1
C	5.0
B	6.5
Q1015	
E	7.1
C	7.1
B	7.8
Q1016	
E	13.2
C	15.0
B	13.9
Q1017	
E	0
C	13.9
B	0.6
Q1018	
E	0
C	-5.4
B	-0.6
Q1019	
E	-8.1
C	-15.2
B	-8.1
Q1024	
E	6.8
C	7.1
B	7.1
Q1101	
E	7.1
C	1.9
B	7.1
Q1102	
E	0
C	7.1
B	0
Q1103	
E	7.1
C	0
B	7.1
Q1105	
E	7.1
C	0
B	7.1

MODE / PIN NO.	STOP
Q3003	
E	4.3
C	0
B	3.8
Q3004	
E	3.3
C	3.4
B	4.1
Q3005	
E	2.8
C	4.5
B	3.4
Q3027	
E	1.8
C	-4.9
B	2.4
Q4002	
E1	3.5
C1	4.1
B1	4.5
E2	4.5
C2	3.9
B2	3.6
Q4003	
E	0
C	0.1
B	0.8
Q4004	
E	0
C	0
B	0.8
Q4008	
E	0
C	0
B	0
Q4009	
E	0
C	4.6
B	0.1
Q4010	
E	4.6
C	0
B	4.6
Q4011	
E	0.2
C	4.6
B	0.2
TP1001	4.6
TP1002	4.6
TP1003	15.0
TP1005	-7.9
TP1006	3.6
TP1007	4.7
TP1008	13.2

MODE / PIN NO.	STOP
TP3001	1.0
TP3002	2.7
TP3003	0.2
TP3004	3.0
TP3005	3.2
TP3006	2.3
TP4001	1.3
TP4002	0
TP4003	0
TP4004	0.2

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

MAIN C.B.A. (SYSTEM CONTROL/SERVO SECTION)

MODE / PIN NO.	REC	PLAY
IC2001		
1	2.1	2.1
2	0.6	0.6
3	0.6	0.7
4	3.0	3.0
5	0	0
6	0.1	0.1
7	0.1	0.1
8	2.3	2.3
9	2.3	2.3
10	2.3	2.3
11	2.3	2.3
12	2.3	2.3
13	2.3	2.3
14	6.9	7.0
15	1.8	1.8
16	1.9	1.8
17	1.8	1.8
18	0.5	0
19	0.5	0
20	0.4	0.6
21	7.2	6.7
22	6.9	6.7
23	6.5	6.7
24	0.5	0.5
25	0.5	0.5
26	0.5	0.5
27	2.6	0.1
28	2.6	2.5
29	1.0	0.9
30	1.0	1.0
31	1.0	0.9
32	1.0	0.9
33	0.1	0
34	2.2	0
35	2.2	2.2
36	1.7	1.7
37	1.7	1.7
38	1.3	1.3
39	1.3	1.3
40	0.1	0.1
41	0.1	0.1
42	0	0
43	0.1	0
44	2.1	2.1
45	0.7	0.7
46	0.6	0.6
47	0.3	0.3
48	2.1	2.1
49	6.1	6.3
50	2.0	2.0
51	0	0
52	4.6	4.6
53	2.2	2.2
54	---	---

MODE / PIN NO.	REC	PLAY
55	0.8	0.8
56	0	0
57	2.3	2.3
58	2.3	2.3
59	2.3	2.3
60	2.3	2.3
61	2.3	2.3
62	---	---
63	---	---
64	---	---
IC2002		
1	1.0	1.0
2	2.6	3.7
3	1.0	1.0
4	2.6	3.7
5	1.0	1.0
6	2.7	3.7
7	2.0	2.0
8	1.0	1.0
9	0.5	0.5
10	1.0	1.0
11	0.5	0.5
12	1.0	1.0
13	0.5	0.5
14	0.1	0.1
IC2003		
1	1.8	1.9
2	6.5	6.5
3	1.8	1.9
4	6.5	6.5
5	0.1	1.9
6	6.5	6.5
7	6.9	6.9
8	1.8	1.9
9	0.5	0.4
10	1.8	1.9
11	0.5	0.5
12	1.8	1.9
13	0.5	0.5
14	0.1	0.1
IC6001		
1	4.6	4.6
2	4.5	4.5
3	4.6	4.6
4	0.1	0.1
5	4.5	4.5
6	4.5	4.5
7	0.1	0.1
8	0.1	0.1
9	4.6	4.6
10	4.5	4.5
11	3.5	3.5
12	0.1	0.1
13	0.1	0.1
14	4.5	4.5

MODE / PIN NO.	REC	PLAY
15	4.6	4.6
16	4.5	4.5
17	4.5	0
18	0.1	0.1
19	0.1	0.1
20	4.5	4.5
21	0.1	0.1
22	0	0
23	2.3	2.3
24	0.1	0.1
25	4.6	4.6
26	4.5	0
27	0.2	0.1
28	4.5	0
29	0	0
30	0.2	0.3
31	4.6	4.6
32	2.5	2.5
33	2.0	2.0
34	2.1	2.1
35	4.6	4.6
36	4.6	4.6
37	---	---
38	1.4	0
39	0	0
40	0.6	0.7
41	2.6	2.6
42	4.6	4.6
43	4.5	4.6
44	4.5	4.5
45	0	0
46	0	0
47	4.6	4.6
48	0	0
49	0	0
50	2.4	2.3
51	4.6	4.6
52	2.3	2.2
53	2.3	2.3
54	4.5	4.5
55	0	0
56	0	0.1
57	0	0
58	0.5	0.5
59	0	0
60	0.3	0.3
61	0	0
62	4.5	4.6
63	4.5	4.6
64	0.1	4.6
65	2.2	2.2
66	0.8	0.8
67	2.3	2.3
68	2.3	2.3
69	2.3	2.3

MODE / PIN NO.	REC	PLAY
70	2.3	2.3
71	0	0
72	2.2	2.2
73	4.6	4.6
74	2.7	2.3
75	2.0	2.3
76	2.3	2.2
77	4.6	4.6
78	0	0
79	2.5	2.5
80	---	---
81	4.6	4.6
82	4.6	4.6
83	0	0
84	4.6	4.6
85	4.1	4.1
86	4.4	0.1
87	0	0.1
88	0.1	0.1
89	2.2	0.1
90	4.2	0.1
91	0.3	0.3
92	4.6	4.6
93	0.4	0.3
94	4.6	2.0
95	4.6	4.6
96	4.6	4.6
97	4.6	4.6
98	2.3	2.3
99	4.6	4.6
100	0.1	0.1
IC6002		
1	4.6	4.6
2	4.6	4.6
3	---	---
4	0	0
IC6005		
1	0.8	0.8
2	0.9	0.9
3	1.0	0.8
4	0	0
5	0.2	0.2
6	4.5	4.5
7	4.5	4.5
8	4.3	4.3
IC6006		
1	0	0
2	7.0	7.0
3	4.6	4.6
IC6007		
1	2.1	2.0
2	7.0	7.0
3	7.0	7.0
4	0.1	0
5	0.1	0.1

MODE / PIN NO.	REC	PLAY
6	0.1	4.6
7	1.8	0
8	0	0
IC6203		
1	1.2	1.2
2	0	0
3	0	0
4	4.2	4.4
Q6004		
E	4.6	4.6
C	4.5	0
B	3.9	4.6
Q6008		
E	0	0
C	0	4.5
B	4.5	0
Q6010		
E	0	0
C	0	0.1
B	0	0
Q6012		
E	0	0
C	4.5	0
B	---	---
Q6013		
E	0.4	0.4
C	7.0	7.0
B	0	0
Q6021		
E	7.0	7.0
C	7.0	0
B	0	6.3
TP6001	0.8	0
TP6003	0.1	0.1
TP6004	---	---
TP6006	4.5	0
TP6007	---	---
TP6010	4.6	4.6
TP6011	4.5	---
TP6012	4.6	4.6
TP6014	4.5	4.5
TP6015	4.5	4.5
TP6020	4.1	4.1
TP6021	3.1	3.1
TP6022	3.1	3.1
TP6023	0	0
TP6101	0.1	0
TP6102	0.1	0
TP6103	0	0
TP6104	4.6	4.6
TP6105	4.6	4.6
TP6106	4.6	4.6
TP6107	0.2	0

MODE / PIN NO.	REC	PLAY
TP6108	0	0
TP6109	0	0
TP6201	2.3	2.3
TP6202	2.3	2.2
TP6205	2.1	2.3
TP6206	2.0	2.3
TP6207	2.3	2.3
TP6208	0.8	0.8
TP6210	2.2	2.2
TP6212	0.9	1.8
TP6215	0	0
TP6216	0.2	4.6
TP6220	1.0	0.9

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

LCD C.B.A. (C,D,DA,E,EA,F,FA,G,GA)

MODE / PIN NO.	CAMERA
IC9001	
1	1.8
2	1.8
3	1.8
4	0.1
5	0.1
6	0.1
7	0.1
8	1.5
9	3.8
10	2.6
11	2.6
12	2.6
13	2.6
14	2.6
15	2.6
16	2.6
17	0.1
18	7.5
19	0.1
20	0.1
21	0.5
22	1.7
23	1.7
24	1.7
25	3.5
26	1.9
27	1.7
28	0.1
29	0.1
30	0.1
31	0.6
32	0.3
33	1.8
34	3.1
35	0.1
36	0.1
37	0
38	3.4
39	0.1
40	0
41	3.5
42	0.2
43	3.4
44	3.5
45	0.1
46	3.4
47	2.1
48	2.1
IC9002	
1	6.6
2	-15.6
3	6.6
4	6.6
5	13.1

MODE / PIN NO.	CAMERA
Q1203	
E	3.4
C	3.4
B	0.1
Q1206	
E	13.2
C	13.1
B	12.5
Q1207	
E	0.1
C	0.1
B	4.2
Q1208	
E	7.5
C	13.1
B	8.1
Q1209	
E	0.1
C	8.1
B	0.7
Q1210	
E	-15.5
C	-15.1
B	-14.3
Q1211	
E	-15.5
C	-15.0
B	-15.1
Q1212	
E	0.1
C	-14.3
B	-0.4
Q1213	
E	5.0
C	7.0
B	5.5
Q1214	
E	3.4
C	3.4
B	0
Q1215	
E	0.1
C	0.1
B	0
Q9051	
E	0
C	4.5
B	-0.3
Q9052	
E	0
C	4.5
B	-0.3
Q9053	
E	2.9
C	0.1

MODE / PIN NO.	CAMERA
B	2.4
TP1201	3.5
TP1202	4.6
TP1203	13.1
TP1204	7.5
TP1205	5.0
TP1206	15.0
TP9001	2.6
TP9002	2.6
TP9003	2.6
TP9004	---
TP9005	0.1
TP9006	0.1
TP9007	0.8

LCD C.B.A. (H,HA,M,MA)

MODE / PIN NO.	CAMERA
IC9001	
1	1.8
2	1.8
3	1.8
4	0.1
5	0.1
6	0.1
7	0.1
8	1.5
9	3.8
10	2.6
11	2.6
12	2.6
13	2.6
14	2.6
15	2.6
16	2.6
17	0.1
18	7.5
19	0.1
20	0.1
21	0.5
22	1.7
23	1.7
24	1.7
25	3.5
26	1.9
27	1.7
28	0.1
29	0.1
30	0.1
31	0.6
32	0.3
33	1.8
34	3.1
35	0.1
36	0.1
37	0
38	3.4
39	0.1
40	0
41	3.5
42	0.2
43	3.4
44	3.5
45	0.1
46	3.4
47	2.1
48	2.1
IC9002	
1	6.6
2	-15.6
3	6.6
4	6.6
5	13.1

MODE / PIN NO.	CAMERA
Q1203	
E	3.4
C	3.4
B	0.1
Q1206	
E	13.2
C	13.1
B	12.5
Q1207	
E	0.1
C	0.1
B	4.2
Q1208	
E	7.5
C	13.1
B	8.1
Q1209	
E	0.1
C	8.1
B	0.7
Q1210	
E	-15.5
C	-15.1
B	-14.3
Q1211	
E	-15.5
C	-15.0
B	-15.1
Q1212	
E	0.1
C	-14.3
B	-0.4
Q1213	
E	5.0
C	7.0
B	5.5
Q1214	
E	3.4
C	3.4
B	0
Q1215	
E	0.1
C	0.1
B	0
Q9004	
E	0.1
C	3.5
B	0.1
Q9005	
E	3.5
C	15.0
B	3.5
Q9051	
E	0
C	4.5

MODE / PIN NO.	CAMERA
B	-0.3
Q9052	
E	0
C	4.5
B	-0.3
Q9053	
E	2.9
C	0.1
B	2.4
TP1201	3.5
TP1202	4.6
TP1203	13.1
TP1204	7.5
TP1205	5.0
TP1206	15.0
TP9001	2.6
TP9002	2.6
TP9003	2.6
TP9004	---
TP9005	0.1
TP9006	0.1
TP9007	0.8

LCD C.B.A. (I,IA,J,JA,K,KA,L,LA)

MODE / PIN NO.	CAMERA
IC9001	
1	1.8
2	1.8
3	1.8
4	0
5	0
6	0
7	0
8	1.5
9	3.9
10	2.6
11	2.6
12	2.6
13	2.6
14	2.6
15	2.6
16	2.6
17	0.1
18	7.6
19	0.1
20	0.1
21	0.5
22	1.7
23	1.7
24	1.7
25	3.5
26	1.9
27	1.7
28	0.1
29	0.1
30	0.1
31	0.6
32	0.3
33	1.8
34	3.1
35	0.1
36	0.1
37	0
38	3.4
39	0.1
40	0.1
41	3.5
42	0.2
43	3.5
44	3.5
45	0.1
46	3.4
47	2.1
48	2.1
IC9002	
1	6.6
2	-15.0
3	6.6
4	6.6
5	13.1

MODE / PIN NO.	CAMERA
Q1203	
E	3.5
C	3.5
B	0
Q1206	
E	13.2
C	13.1
B	12.5
Q1207	
E	0.1
C	0
B	4.2
Q1208	
E	7.6
C	13.1
B	8.2
Q1209	
E	0.1
C	8.2
B	0.7
Q1210	
E	-15.4
C	-15.0
B	-14.3
Q1211	
E	-15.4
C	-15.0
B	-15.0
Q1212	
E	0
C	-14.3
B	-0.3
Q1213	
E	5.0
C	7.1
B	5.6
Q1214	
E	3.5
C	3.5
B	0
Q1215	
E	0.1
C	0.1
B	0
Q9004	
E	0.1
C	3.5
B	0.1
Q9005	
E	3.5
C	15.0
B	3.5
Q9051	
E	0.1
C	4.3

MODE / PIN NO.	CAMERA
B	-0.2
Q9052	
E	0.1
C	4.4
B	-0.2
Q9053	
E	2.9
C	0.1
B	2.4
TP1201	3.5
TP1202	4.6
TP1203	13.1
TP1204	7.6
TP1205	5.0
TP1206	-15.0
TP9001	2.6
TP9002	2.6
TP9003	2.6
TP9004	---
TP9005	0.1
TP9006	0.1
TP9007	1.0

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	HA
PV-D301	AA	PV-L651	I
VM-D101	B	PV-L651	IA
PV-L501	C	PV-L661	J
PV-L551	D	PV-L661	JA
PV-L551	DA	PV-L681	K
PV-L561	E	PV-L681	KA
PV-L561	EA	PV-L61	L
PV-L581	F	PV-L61	LA
PV-L581	FA	VM-L451	M
PV-L51	G	VM-L451	MA
PV-L51	G A		
PV-L601	H		

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COLOR EVF C.B.A.
(A,D,E,F,G,H,I,J,K,L,M)

MODE / PIN NO.	CAMERA
IC901	
1	1.8
2	1.8
3	1.8
4	---
5	---
6	---
7	---
8	2.1
9	---
10	6.7
11	6.7
12	6.6
13	6.7
14	6.7
15	6.7
16	6.7
17	0
18	13.2
19	---
20	0.1
21	---
22	1.8
23	1.7
24	1.7
25	3.5
26	1.6
27	1.8
28	0
29	0.1
30	1.6
31	1.8
32	1.8
33	---
34	3.6
35	3.6
36	---
37	0
38	3.4
39	0.1
40	---
41	---
42	---
43	3.5
44	3.5
45	0
46	---
47	2.2
48	2.1
IC902	
1	1.8
2	3.6
3	3.6
4	0
5	1.8
6	3.5
7	3.5
8	3.5
Q901	
E	0
C	5.5
B	0.2

COLOR EVF C.B.A.
(AA,DA,EA,FA,GA,HA,IA,JA,KA,LA,MA)

MODE / PIN NO.	CAMERA
IC901	
1	1.8
2	1.8
3	1.8
4	---
5	---
6	---
7	---
8	2.1
9	---
10	6.7
11	6.7
12	6.6
13	6.7
14	6.7
15	6.7
16	6.7
17	0
18	13.2
19	---
20	0.1
21	---
22	1.8
23	1.7
24	1.7
25	3.5
26	1.6
27	1.8
28	0
29	0.1
30	---
31	1.8
32	---
33	---
34	3.6
35	---
36	---
37	0
38	3.4
39	0.1
40	---
41	---
42	---
43	3.5
44	3.5
45	0
46	---
47	2.2
48	2.1
Q901	
E	0
C	5.5
B	0.2

EVF C.B.A. (B,C)

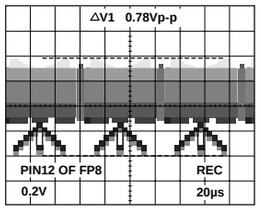
MODE / PIN NO.	CAMERA
IC901	
1	2.0
2	4.5
3	2.0
4	0
5	2.0
6	0.6
7	0
8	4.2
9	3.7
10	0
11	1.8
12	4.4
13	2.6
14	1.9
15	1.8
16	2.2
Q901	
E	0
C	5.9
B	0.5
Q902	
E	2.9
C	-29.6
B	2.3
TP901	3.7
TP902	4.2

COMPARISON CHART OF MODELS & MARKS

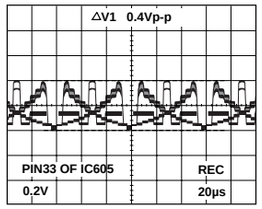
MODEL	MARK	MODEL	MARK
PV-D301	A	PV-L601	HA
PV-D301	AA	PV-L651	I
VM-D101	B	PV-L651	IA
PV-L501	C	PV-L661	J
PV-L551	D	PV-L661	JA
PV-L551	DA	PV-L681	K
PV-L561	E	PV-L681	KA
PV-L561	EA	PV-L61	L
PV-L581	F	PV-L61	LA
PV-L581	FA	VM-L451	M
PV-L51	G	VM-L451	MA
PV-L51	G A		
PV-L601	H		

Note:
For distinguishing marks A from AA, D from DA, etc., refer to "1 MODEL NO. IDENTIFICATION MARK IN THIS SERVICE MANUAL" section.

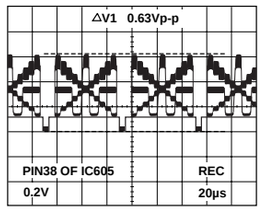
MAIN C.B.A.



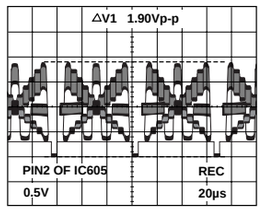
WF1



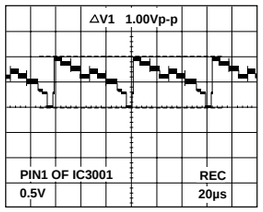
WF2



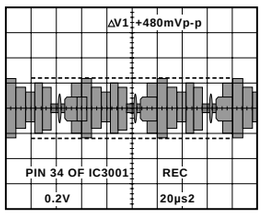
WF3



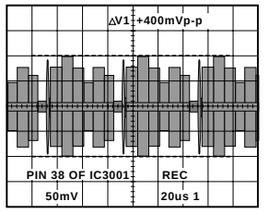
WF4



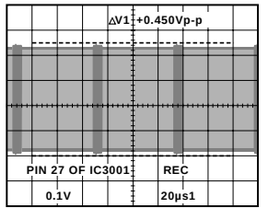
WF5



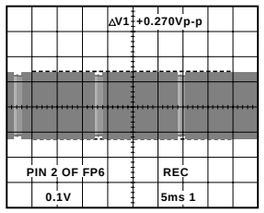
WF6



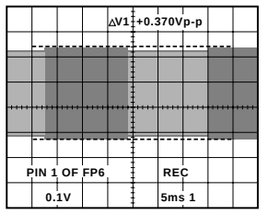
WF7



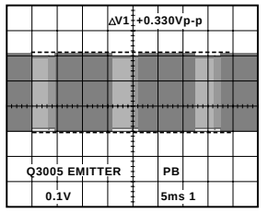
WF8



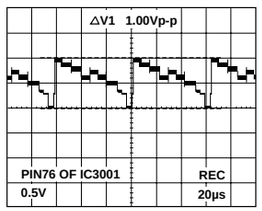
WF9



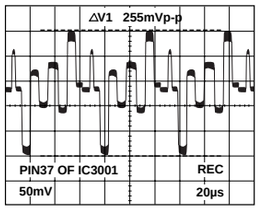
WF10



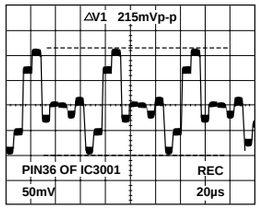
WF11



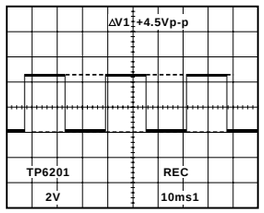
WF12



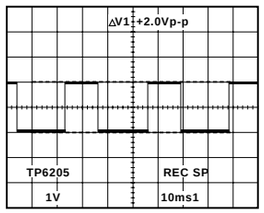
WF13



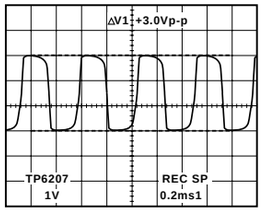
WF14



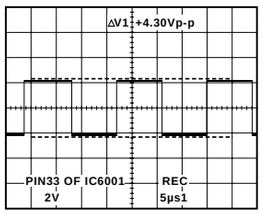
WF15



WF16

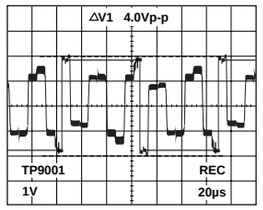


WF17

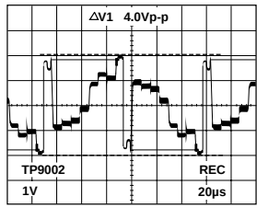


WF18

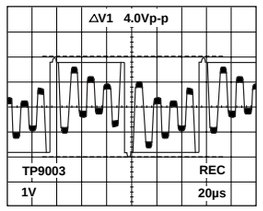
LCD C.B.A.



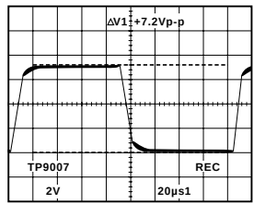
WF19



WF20



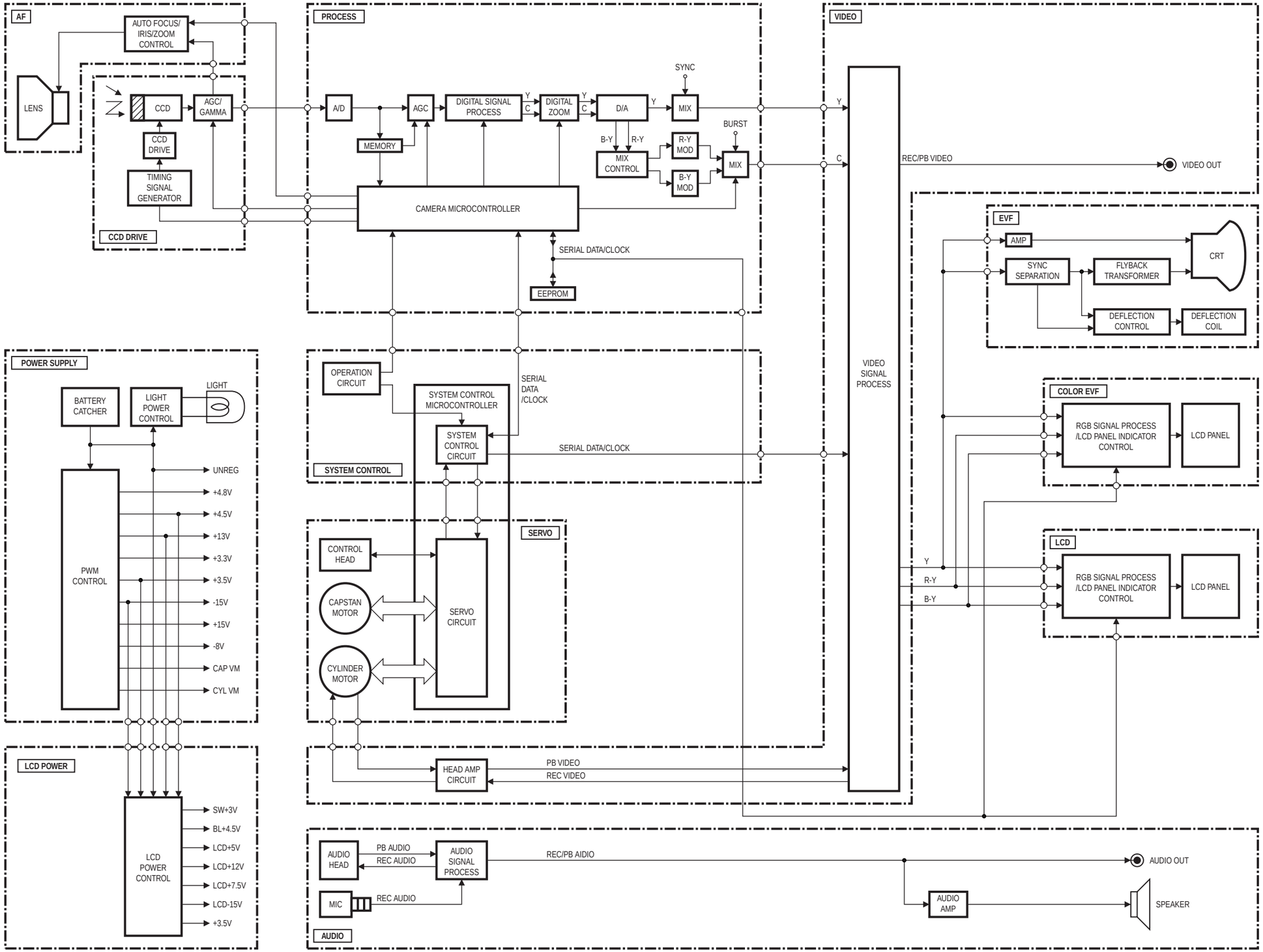
WF21



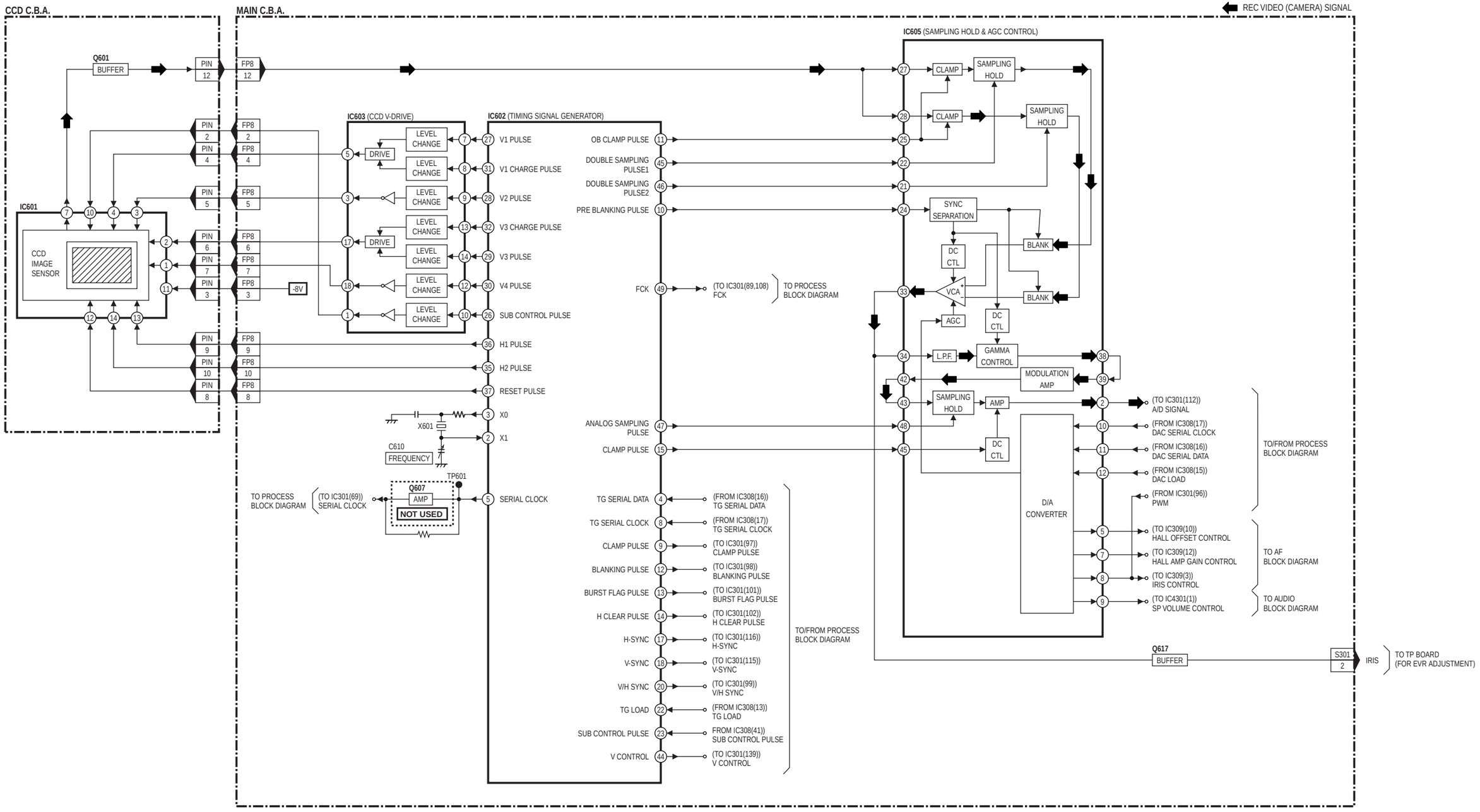
WF22

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

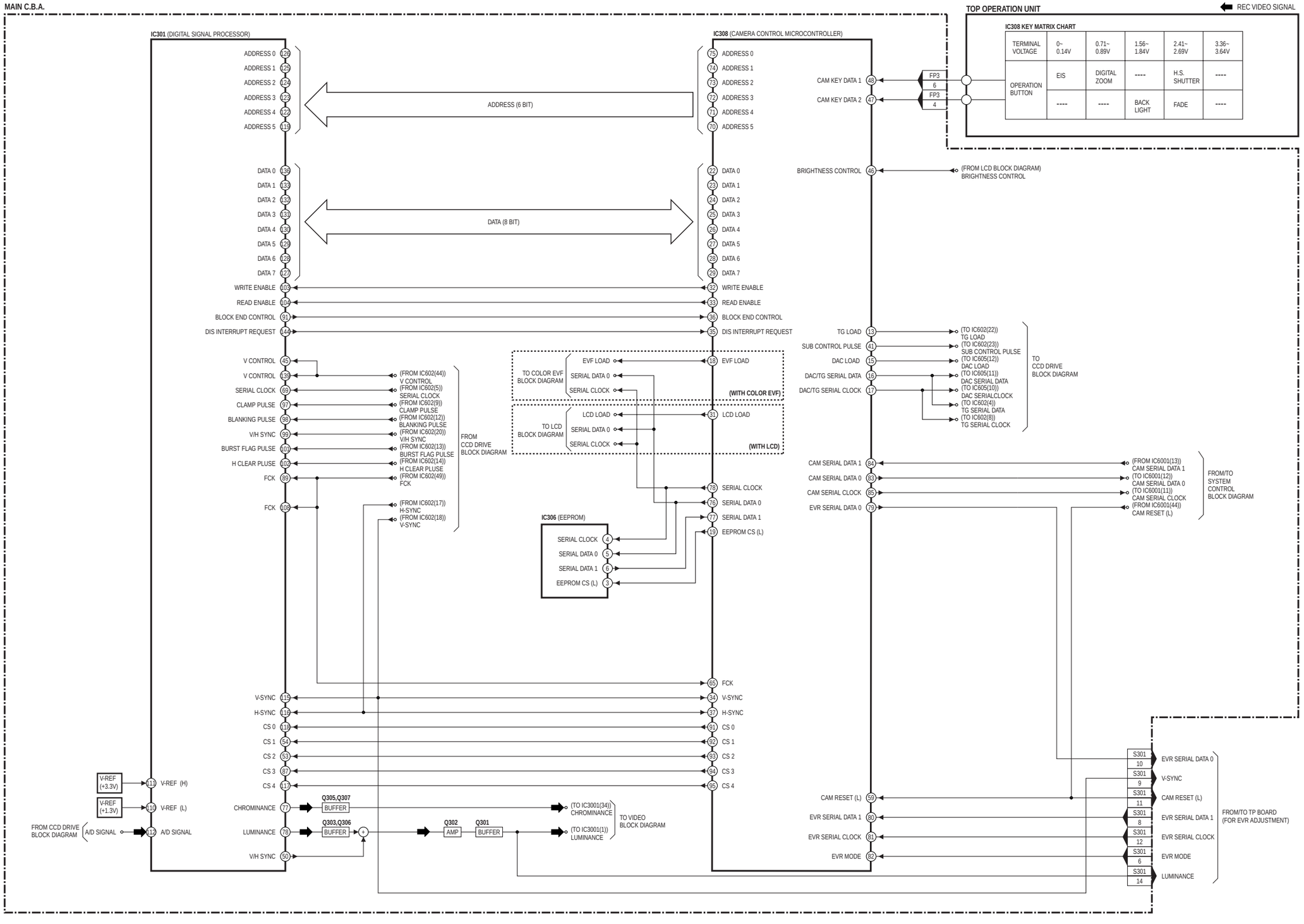
OVERALL BLOCK DIAGRAM



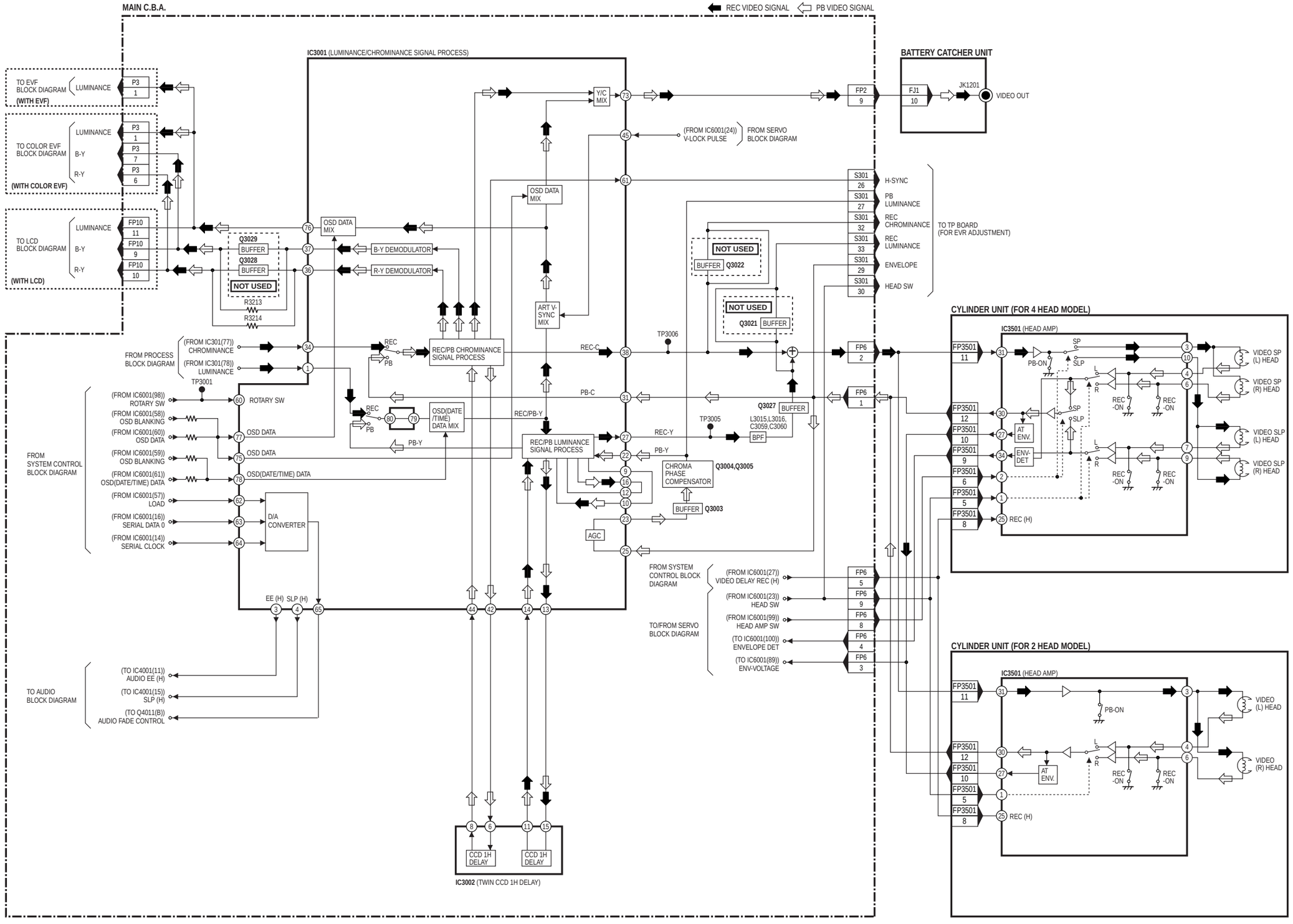
CCD DRIVE BLOCK DIAGRAM



PROCESS BLOCK DIAGRAM



VIDEO BLOCK DIAGRAM



AUDIO BLOCK DIAGRAM